UNIVERSITY OF TORONTO MEDICAL JOURNAL

GENERAL PRACTICE

VOLUME XL
NUMBER 3
JANUARY 1963

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1. R. Lamb and E. S. Maclean, Penicillin V—A Clinical Assessment After One Year, *Brit. M. J.* July 27, 1957, p. 191-193. **2.** J. I. Burn, M. P. Curwen, R. G. Huntsman and R. A. Shooter. A Trial of Penicillin V. *Brit. M. J.*, July 27, 1957, p. 193. **3.** J. Macleod, Current Therapeutics, *The Practitioner*, 178:486, April, 1957. **4.** W. J. Martin, D. R. Nichols and F. R. Heilman, Observations on Clinical Use of Phenoxymethyl Penicillin (Penicillin V), *J.A.M.A.*, p. 928, March 17, 1956.

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This month's cover picture was chosen not for its sentimental appeal, but rather to portray the difficult decision often faced by a general practitioner. Away from a hospital setting and without the associated multitude of laboratory tests and investigations, he must often make his diagnosis and initiate a therapeutic program.

The crest of the Canadian College of General Practice is also found on the cover. The gavel in the centre with a serpent curled around the handle represents the ceremonial gavel which was presented to the college when it was founded in 1954. The gavel was a gift of the Medical Society of the Isle of Cos which incidentally was Hippocrates' birthplace.

D.P.A.

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Editorials

GENERAL PRACTICE TODAY

From the vantage points of 25 years in practice, a past-presidency of a policy setting body (O.M.A.), and now as an employee of organized medicine, I make the following conclusions about general practice. I think that it can be and is, without question, for many the most exciting and fundamentally satisfying *specialty* within the entire spectrum of scientific medicine today.

Note carefully the word *specialty*. All too often some of us have tended in the past to think of general practice as the absence of specialty — and maybe there was some justification for this. However, we look upon today's general physician as a legally qualified practitioner, thoroughly trained in the art and science of diagnosis, and who accepts responsibility for the detection, prevention, diagnosis and management of his patient's daily health problems. This he will do by providing professional understanding, continuing medical care, co-ordinating consultant and ancillary health services and realistically appraising the relationship of illness to life situations.

The general practitioner is ideally situated to know most about people. His special domain is the provision of continuing medical care which the public is searching for and needs. His role is a very positive one with duties he can perform better than anyone else and therefore his is a special field.

Today's students will be interested to learn that the very existence of the College of General Practice is specifically to do for the general practitioner what the Royal College of Physicians and Surgeons was charged in 1929 with doing for those in the standard specialties. In its efforts to achieve this end, residencies and departments of general practice have been established in many hospitals and more than a score of postgraduate scientific assemblies, meetings or clinical days are held under College auspices each year.

Canada's first national conference on "Training for General Practice" was held this fall at which medical educators from many fields participated. They agreed that the skills and attitudes of the family physician should play an important role in the learning experience of medical undergraduates and recommended "A Family Practice for the Faculty" — using family physicians as educators. Such teaching programs are now being established in medical schools and embrace family study, family care, family follow-up programs, preceptorship programs, pre-clinical orientation and team teaching.

Assistantships for the new graduate with experienced solo physicians or with groups and clinics are available today in most parts of Canada and most of them with a view to eventual partnership. Working with a senior general physician is a wonderful introduction to general practice and in Ontario at least there are many more assistantships available than young doctors to fill them.

We like to think that the College's mandatory requirement of 100 hours of postgraduate study each two years as a condition of membership is helping to make general practice worthy of the attention of our best students. The general physician of the future must be a man of science applying the art of medicine. To achieve this, it is essential to take particular steps to keep up-to-date.

We recognize that it is illogical to expect the doctor who covers the broadest spectrum of medicine to take the least amount of formal training — and yet in some respects that is the condition obtaining today. At the same time we are anxious to tell today's students that giant steps have already been taken to alleviate this problem and that all reasonable moves will be made to continue this progress. On the strength of this promise we sincerely hope that more and more of today's students will be attracted to the *specialty* of general practice. Certainly, in my opinion, it is the most challenging frontier in scientific medicine today.

W. V. Johnston, M.D. *Toronto, Ont.*
Executive Director, College of General Practice of Canada.

THIS ISSUE

By devoting an issue to the topic of general practice, the University of Toronto Medical Journal is attempting to present the subject in the broadest and most appealing way, in an effort to rectify a genuine lack of knowledge which most students display when questioned on this vital part of the practice of medicine. Care has been taken to include articles which deal with general practice in varied localities, as well as important related topics such as medical economics and group practice. We also wish to familiarize our readers with the role of the College of General Practice of Canada, an energetic body of highly proficient family practitioners.

The pattern of medical practice has undergone dramatic changes since 1929 when the Royal College of Physicians and Surgeons came into being. Since that date, large numbers of specialists have established themselves throughout the province. Now, in 1963, it is time to examine the effect of this mass specialization on the medical community as a whole.

It is becoming increasingly apparent that outside of the large teaching centres, the consultant specialist is a rare *avis*. Because the number of specialists has grown rapidly, particularly in the more affluent and pleasant communities, there is not enough referred work for all of them, and consequently the majority see patients directly off the street. For example, paediatrics has evolved into general practice with an age limit, while most obstetricians make their major living from normal deliveries. There are many reasons for this radical departure from traditional medical practice, but probably the biggest factor lies in the medical schools. Here, where students are taught almost wholly by specialists, they acquire the impression that the only interesting and rewarding medical work lies with the consultant or single-organ specialist.

Every member of the profession must carefully consider these problems and decide what type of medicine can most adequately and effectively serve the needs of the whole population. It is well to remember that human nature being what it is, most patients want personal service, the type of care provided by the family physician. One must also admit that the vast majority of medical services are of a kind that do not need twelve years of training, and when specialists do routine work at consultant tariffs, the over-all cost of medical care rises. Most important of all, the specialist who spends much of his time dealing with the trivial and normal limits his experience of the abnormal, and dilutes his ability to deal with difficult problems.

It is for these reasons that the University of Toronto Medical Journal feels strongly about the issue of general practice, and we hope that many graduating students will carefully consider and eventually pursue a career in this fundamentally satisfying and challenging type of medicine.

G.A.M.

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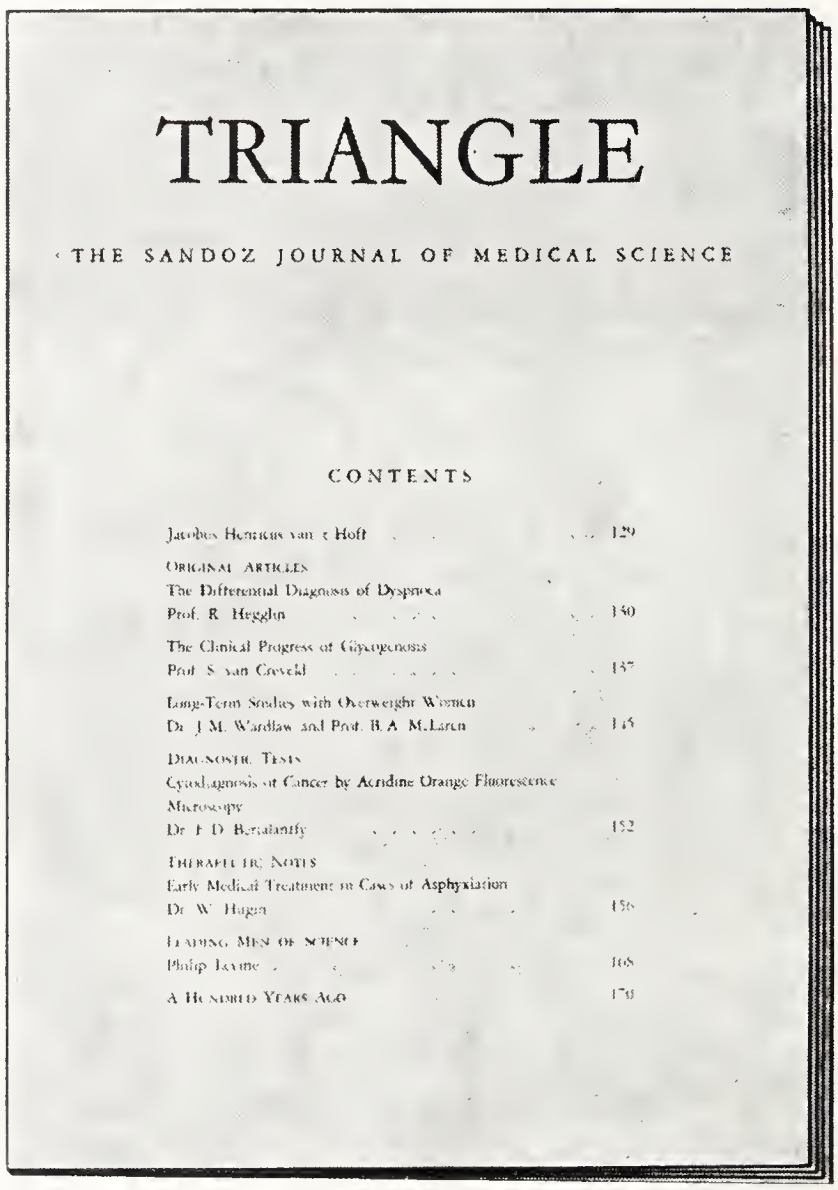
we're gonna put beer in!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Published in Switzerland 4 times yearly, this journal contains original articles by internationally known scientists and clinicians, articles of general interest, reviewing articles, diagnostics tests, biographies and many fascinating annotations.

MEDICAL STUDENTS

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The College of General Practice in Modern Medicine

J. T. McCullough M.D., M.C.G.P.
Elmira, Ontario.
President-elect, The College of General Practice of Canada.

The practice of medicine has changed remarkably in the last 50 years and particularly in the last quarter century. Prominent among these developments, has been the tremendous growth of specialization which has attracted so many medical graduates into these fields of limited endeavour. Perhaps it was inevitable that the pendulum should swing too far. It was also inevitable that there should come an awakening, a re-appraisal, and an effort to determine the best pattern of practice. In this re-evaluation of modern practice, the recognition of the position of the General Practitioner as the indispensable personal doctor is noteworthy.

It is perhaps an opportune time to direct the attention of medical undergraduates to some important developments taking place in general practice in Canada. In the last century, most doctors in North America were general practitioners. Some, because of extensive experience in a certain field became highly skilled and were frequently called in consultation by their colleagues. Possibly, they were the finest of all consultants, because of their extensive experience in general practice.

With the advent of new discoveries in medicine, stimulated particularly by the work in laboratories and research centres, medical practice underwent a revolution. It was no longer possible for a doctor to be well informed on every facet of medicine, and the era of specialization was reached.

To bring order out of chaos, the Canadian Medical Association in 1929 sponsored the formation of the Royal College of Physicians and Surgeons to ensure that a practitioner in a limited field should obtain a distinguishing designation indicating adequate qualification. This has been a great success and had been a major factor in maintaining a high standard of medical care in Canada.

However, it was at first not appreciated that the development of improved specialist services without a comparable emphasis on general practitioner services was not in the best interests of either the public or the profession. Thoughtful physicians realized that medicine had become so complicated that the general physician was needed even more than before as the patient's medical advisor as well as personal doctor.

It was this realization that prompted the Canadian Medical Association in 1954 to sponsor the organization of the College of General Practice of Canada as it had 15 years earlier sponsored the organization of the Royal College of Physicians and Surgeons. The College undertook the task of creating a body of physicians whose competence in the field of general practice would be comparable to that of specialists in the more restricted fields.

The College has now grown in eight years to a body of nearly 2,400 physicians. It is, like the Royal College of Physicians and Surgeons, an educational and standard-setting organization. Its primary purpose is to provide the best possible medical care to Canadians by ensuring that its members are well trained, competent, and experienced physicians whose post-graduate education is supervised and continuing. It is the only medical organization in the country that demands continuing education as a requirement for membership.

One hundred hours of approved post-graduate study every two years is mandatory. This circumstance has stimulated medical schools and hospitals throughout Canada to offer numerous courses of varying duration. This is in marked contrast to the situation prior to the formation of the College when post-graduate instruction was much more inconvenient to obtain.

Through the efforts of College members, some 100 large Canadian hospitals now have Departments of General Practice. Many of these require membership in the College of General Practice of Canada as a condition of membership. The College places much emphasis on hospital staff membership, believing that contact with his colleagues, both specialist and generalist is important to the competent, efficient general practitioner.

It is a college objective, being advanced with increasing success, that every qualified general physician should hold a staff appointment in a hospital convenient to his practice, where his privileges will be in accordance with his ability, training and experience as judged by his professional confreres.

The education of the recent graduate has been the subject of much study by the Committee on Education and the Committee on Residency Training. As a result of their efforts, residency programs have been established in 36 large Canadian hospitals to follow the initial junior interne year of training. A further step has been taken with the approval by the College—to establish a Fellowship plan. This plan, when details have been completed, will raise still further the level of competence of the young physician who enters general practice.

The College has pioneered in another field of postgraduate education. Its Medical Recording Service has built up a large and constantly expanding library of recordings—both tape and phonograph discs. These lectures are given by prominent and well-qualified physicians and surgeons and are available to all members. Modern educationalists consider this medium to be an important advance, the audible word establishing a rapport which is often not achieved by the printed page.

Research is a key word in medical progress. In recent years there has been a tendency to associate this with large institutions equipped with expensive, gleaming laboratories and hordes of technicians. It should be recalled that many advances in medicine have come about through careful observation in the physician's office and at the patient's bedside.

The College of General Practice has many research projects under way, and its Committee on Research maintains contact with counterparts in other general practitioner organizations throughout the world. Its present activities include studies on blood cholesterol levels, gastric acidity, histoplasmosis and factors influencing the development of diabetes. Its program for the detection of phenylketonuria has already produced results. This is only a beginning. Much remains to be done, and the general physician, constantly in contact with disease in its early stages, is in a position to make significant contributions.

In modern society the psycho-somatic or psychologically-induced illnesses are assuming greater importance. Many pathological conditions are related to sociological and psychological factors. These patients come to us in ever-increasing numbers. The College views this as the legitimate field and responsibility of the general physician. He has special opportunities for service in that his knowledge of the patient's heredity, environment and sociological influences can now be approximated by the consultant or single-organ specialist.

The best medical care will be obtained if every family has a good family doctor. He will care for that which lies within his competence and call on his colleagues in the specialties wherever indicated. Neither is subsidiary to the other.

The key word is education. Centuries ago Plato remarked that education is a life-long business. The College of General Practice of Canada is dedicated to this principle, knowing that in Medicine only competence is recognized. Prestige follows naturally.

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Abstract

Long Term Anticoagulant Therapy After Myocardial Infarction, Lancet, No. 7257, Vol 11, 29 Sept. 1962.

A well controlled study to determine if there is a reduced reinfarction rate and mortality rate with long term anticoagulant therapy was performed. The total series comprised 315 patients: 145 treated with anticoagulants, 170 with placebos. Prothrombin times were done on both groups. Conclusions of the study indicated that it cannot be ruled out that anticoagulant therapy exerts a prophylactic effect, but as manifested by mortality, there is no effect on the course of the disease. Hemorrhagic complications however, are an important consideration. Therefore, routine administration of these drugs does not seem justified. *F.L.*

The Preceptorship Program

Ruth Sky Shykoff M.D., M.C.G.P.
Toronto, Ontario.
Chairman, Preceptorship Committee.

By the time a student has completed his third medical year, he has been exposed to the great bulk of the scientific aspect of the practice of medicine. At this stage in his education he is eager to observe intimately the art of applying this knowledge to the problems presented by a patient and his family.

Sometime in 1957 representatives from C.A.M.S.I. approached the College of General Practice requesting a preceptorship plan. A committee from the Metropolitan Toronto branch of the College and members of the Alumni Association met with Dean Macfarlane, and he expressed great enthusiasm for the plan.

After considerable discussion, the committee arrived at a workable set of rules. The preceptorship programme is voluntary both for student and physician. The student lives in the doctor's home as a guest for approximately two weeks, usually the last part of May, or first half of September. No exchange of money takes place between student and preceptor. The student is not in any sense an assistant, and must not be expected to assume any responsibility for laboratory work or the care of patients. The student "shadows" his preceptor to observe the art and science of medicine at work in the patient's home, the doctor's office, and the hospital.

Each patient seen in general practice will illustrate the interrelationship of illness and the patient's family, fears, frustrations, and fetishes. Each patient presents as a mystery story. In some the plot is clearly outlined in the first chapter, and is readily solved. Some require considerable sleuthing before the culprit is exposed. A three year old child with recurring upper respiratory infections was referred to an allergist for investigation. He was found to be allergic to tobacco, feathers and house dust. The parents stopped smoking, removed feathers and fluff from the child's bedroom, eliminated all pets except goldfish, carefully cleaned house regularly, and we began regular desensitizing injections. This programme should have worked, but it didn't. The little fellow continued to have attacks which became frankly asthmatic. One night the weather was too inclement for the parents to bring the child to the office. The family doctor was greeted at the door by the anxious father, the wheezing child was in mother's arms in the living room, and sitting in a place of honour atop the T.V. set was a splendid specimen of a Great Snowy Owl beautifully stuffed and mounted. The child was given some adrenalin, the owl was given to a neighbour, and the child ceased to have attacks of asthma. Many problems are more complex than this, but this illustrates a mystery solved by the family doctor.

A very important aspect of general practice observed by the student is the cooperation between the specialist consultant and the referring family doctor. Each plays an important part in the drama of the illness. The patient who suddenly finds himself in hospital for emergency surgery is a frightened, lonely person. The presence of the family doctor is very comforting. Besides translating the opinion of the distinguished specialist, he represents the contact with the world he knew before finding himself in strange new surroundings. The regular visits from his personal physicians contribute as much to his rapid convalescence as do the expert surgery, antibiotics, and gentle nursing.

A method of office routine and an introduction to the keeping of business records has been of extreme interest to the student preceptees. The importance of an efficient receptionist, a good answering service, and an understanding, patient spouse is very apparent.

When a student is accompanying his preceptor, he is introduced to the patient as "Mr. ....., a final year medical student who is spending some time with me to see what general practice is like." Very few patients object to the presence of a stranger. Usually they seem to have a higher regard for their doctor. The discussions about people and their problems which take place after the day's work is finished, are most instructive. The questions and observations made by the student are frequently helpful to the doctor.

Between fifteen and thirty preceptorships have been arranged each summer in the past five years at U. of T. The students who have observed general practice have acquired added respect for this fundamentally important way of medical life. Several were influenced towards a choice of general practice as a career. Others were more convinced that they would prefer to specialize. The participating doctors have found the close contact with the enthusiastic, intelligent young people an exhilarating and satisfying experience.

The General Practice Course

H. F. King, B.A., M.D., M.C.G.P.
Downsview, Ont.

As the young doctor's undergraduate training comes to a close there may be some doubt as to which medical field to plough after the spring of graduation. For many, this mood of indecision will persist into the junior internship year. During the fall of the junior year a paramount decision must be reached to the following questions. Shall I enter general practice next year? Shall I specialize? Shall I take the General Practice Course? The decision must be reached before the newly graduated doctor has really had experience in the various subdivisions of modern medicine. The purpose of this article is to describe one of the possible alternatives following the Junior Year: the General Practice Rotating Internship as arranged by the Faculty of Medicine, Division of Postgraduate Medicine, University of Toronto.

The course may be taken immediately after the junior year or may be taken after some years in general practice. The year begins in July and is divided into four equal parts. Three months each are devoted to Pediatrics, Emergency, Medicine, and Obstetrics and Gynecology.

Pediatrics

Pediatrics is taken at The Hospital for Sick Children, Toronto. The program presented will vary from year to year. This year we rotate through a different service each month. One month is spent with older children. Congenital heart disease, hemophilia, glomerulo-nephritis interspersed with eosinophilic granuloma and astrocytoma is the order of the day. This is not the every day type of problem seen in general practice. However, it is worthwhile to be familiar with these diseases and to know what prognosis current pediatrics has to offer these children.

One month is spent on the emergency O.P.D. service of Sick Children's. This is a veritable garden of general practice problems presenting in many languages. The service is very busy and most of the little patients have upper respiratory infections. The attending staff are always present at the clinics and very willing to help with problems as they arise. In the emergency department, the more dramatic diseases such as tracheitis, bronchiolitis, febrile convulsions and poisonings are seen. Children will swallow absolutely anything from brake fluid to javex, the most common being aspirin. One becomes very familiar with the art of gastric lavage on this service!

One month is served on the infectious service where one becomes very familiar with the management of gastro-enteritis, complicated whooping cough, meningitis and so on. Our work consists of history taking, participation in management of public cases, procedures, routine urines and blood work. We rank with juniors in the scheme of things as do all interns beginning their first year of pediatric training. Sick Children's is a great teaching centre — rounds, seminars, journal clubs are endless. The opportunity to work and learn makes this section of the rotation one of the highlights of the year.

Emergency

The Emergency quarter of the year will be taken at either the Toronto General or Toronto Western Hospitals. At the Western Hospital we did not usually see the cases "first-hand." This was the responsibility and opportunity of the Junior interns unless the case-load was very heavy. We served in the capacity of emergency assistant resident and were called upon to assist the Juniors with their problems and to participate more fully in the care of the more seriously ill or injured. It is common experience that a large proportion of patients presenting themselves to emergency are not true emergencies and it is helpful to the emergency assistant resident not to be expected to see unscreened patients. Those who are appointed to the Toronto General Hospital serve in emergency as do the junior rotating interns. This type of experience does have considerable value but it is thought that a more selective type of work seems more reasonable to an individual taking his second year of postgraduate training. However, the emergency care of such problems as diabetic coma, acute myocardial infarction, acute head injuries, acute psychiatric problems, chest injuries and acute abdominal pain are learned in no better place than "emergency".

Obstetrics and Gynecology

The third quarter of the year is offered by the Grace and Wellesley hospitals. The Grace is a hundred and twenty bed hospital and has all the congeniality and friendliness that often characterize smaller centres. The interne staff consists of a resident in training in the Cannell course and two general practice rotators. Although teaching is not formal and highly organized, the attending staff are always most anxious to discuss and assist with problems as they arise. In the three

month period it is usual to deliver fifty babies. The resident does the public Cesarean sections with the G.P. rotator assisting. It should be possible to learn the art of being a good assistant in this important phase of obstetrics. Certainly, the vast majority of Canadian hospitals do not have complete intern staffs. It is therefore essential that general practitioners should at least be competent to assist in the operating room. Many leaving this course will be going to areas of small population and geographical isolation where they will be required to operate. After two years of training in Toronto, let us hope that these doctors will be able to master an emergency Cesarean section when fellowship assistance is not available.

As far as gynecology is concerned there are numerous D and C's to do, assisting at pelvic repairs and experience in treating numerous gynecological conditions which will form a large part of every practitioner's work in his future office.

Certain criticisms of this quarter of the year were received. Chief among these are firstly that the intern is expected to do private gynecology histories, and secondly, the lack of an organized teaching program. However, there are lectures given every week at the Toronto General at five o'clock which the rotators are welcome to attend. It is hoped that the hospitals concerned are able to make attendance possible.

Medicine

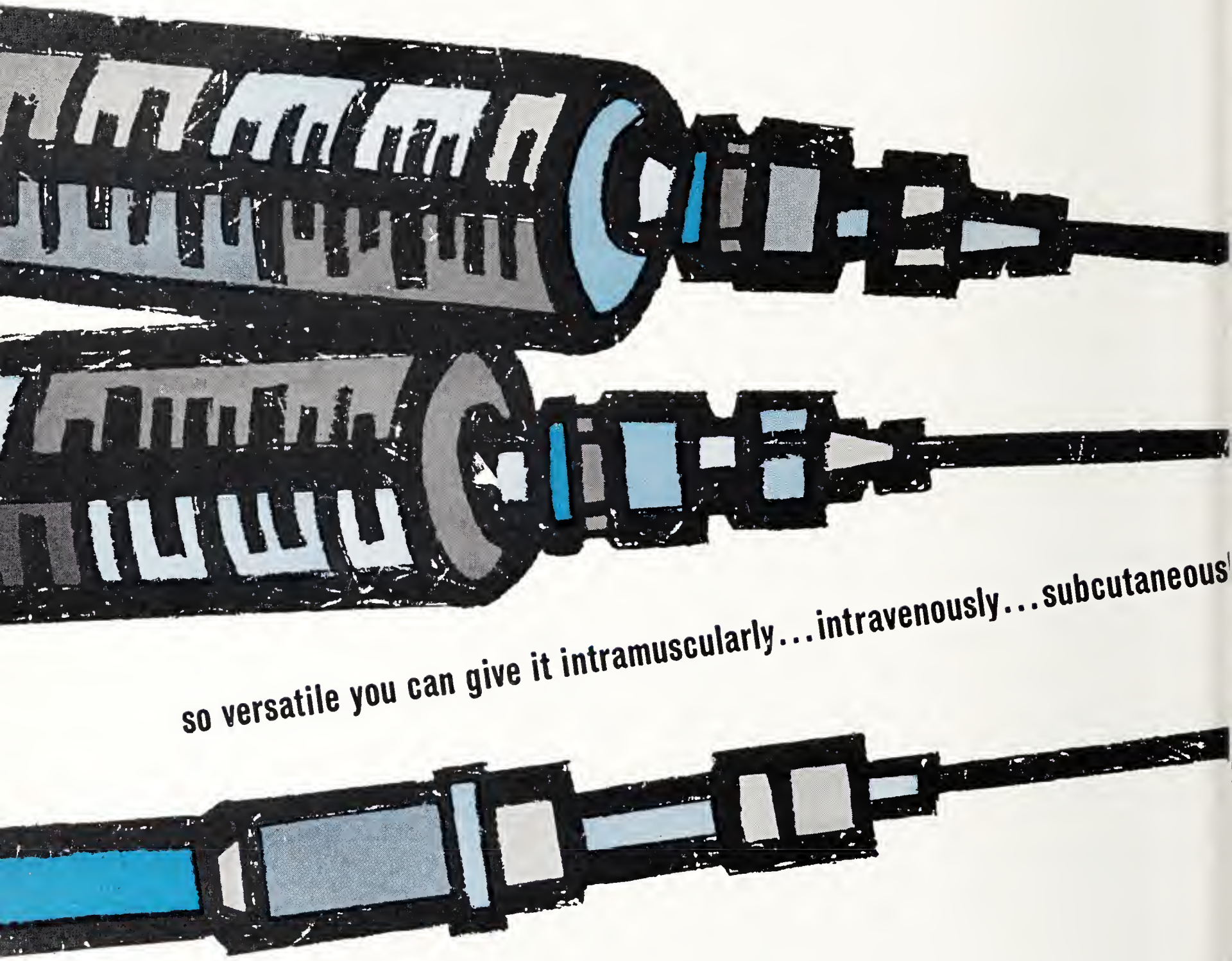
The fourth quarter of study is devoted to Internal Medicine. At St. Michaels this is reported to be excellent. The second year doctor is given the responsibility of a senior and rotates through three different sub-specialties. The responsibility also includes "on call" duties for emergency and the responsibility of a large number of public patients. Here as nowhere else in the year is the doctor called upon to practise both the art and science of medicine, to diagnose and to heal the physical disabilities and to recognize the emotional problems that complicate the issues.

Medicine is also undertaken at the Wellesley hospital. The present intern on this service is most satisfied with his work and responsibility. He has charge of between fifteen and twenty public patients and works under the supervision of the resident and the Chief of Medicine. The responsibilities at the Wellesley include admitting and emergency every fourth day. This will be found to be a stimulating experience.

Post-graduate medical training is under careful study from many angles. Great progress is being made in this field. Perhaps it is not unreasonable to make a few suggestions in this journal concerning our own G.P. Course. Those taking the course must be recognized as being in their second postgraduate year and given responsibility accordingly. Many of the duties of the interns are technical time consuming such as routine urines and bloods and private histories. The ward routine is stressed. Every doctor must be capable of doing a urine microscopic and blood work to elucidate a diagnosis and initiate immediate treatment where indicated. To do this work on an elective admission for known congenital heart disease is another kettle of fish. It would be very useful if certain sections of the year were elective to suit the needs of the community in which the doctor will practise. For example, three months spent on anesthesia would be most valuable to men who are going to smaller communities and will have to do anesthesia whether they like it or not. Dermatology, psychiatry, geriatrics, general surgery, public health are all part of many general practitioners work. There are just eight doctors taking this course this year. This should be encouraged to expand. Some of our excellent new and forthcoming suburban hospitals should be included in some phase of the program. Future programs must be well supervised by the faculty office lest some parts of the course not meet the required standards of teaching.

Being realistic in appraising the usefulness of the course, let us realize that much knowledge will come through actual experience in practice. The course may fill the needs of some but not satisfy others. If one goes directly into practice particularly in association with a good group or a good associate he may do very well without taking this course and learn a great deal while actually in practice. The course may be more valuable after some years in practice because the doctor concerned will have had to face many problems and make many decisions and with this backlog of practical experience, postgraduate training will be taken with better perspective and better discrimination. Let us always remember the more adequate the training and knowledge of the doctor, the more satisfaction will be derived from the practice of medicine. There will be greater confidence that you are able to give your patients the best care and treatment that they require. There will be more certainty in knowing where and when to refer patients. Further training and the acquisition of more skills may be demanded by the area in which you serve — extraordinary demands that the individual be competent in many fields of medicine.

For these and other reasons the General Practice Internship of the University of Toronto, Faculty of Medicine is recommended. Those wishing further information should contact the office of Dr. M. C. Macdonald, Director, Division of Postgraduate Medicine, Faculty of Medicine, University of Toronto.



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References: (1) Ross, S.; Puig, J. R., & Zaremba, E. A.: **Antibiotics Annual 5**:803, 1958. (2) McCrumb, F. R., Jr.; Snyder, M. J., & Hicken, W. J.: **ibid.**, p. 837. (3) Payne, H. M., & Hackney, R. L., Jr.: **ibid.**, p. 821.

Medical literature available on request.

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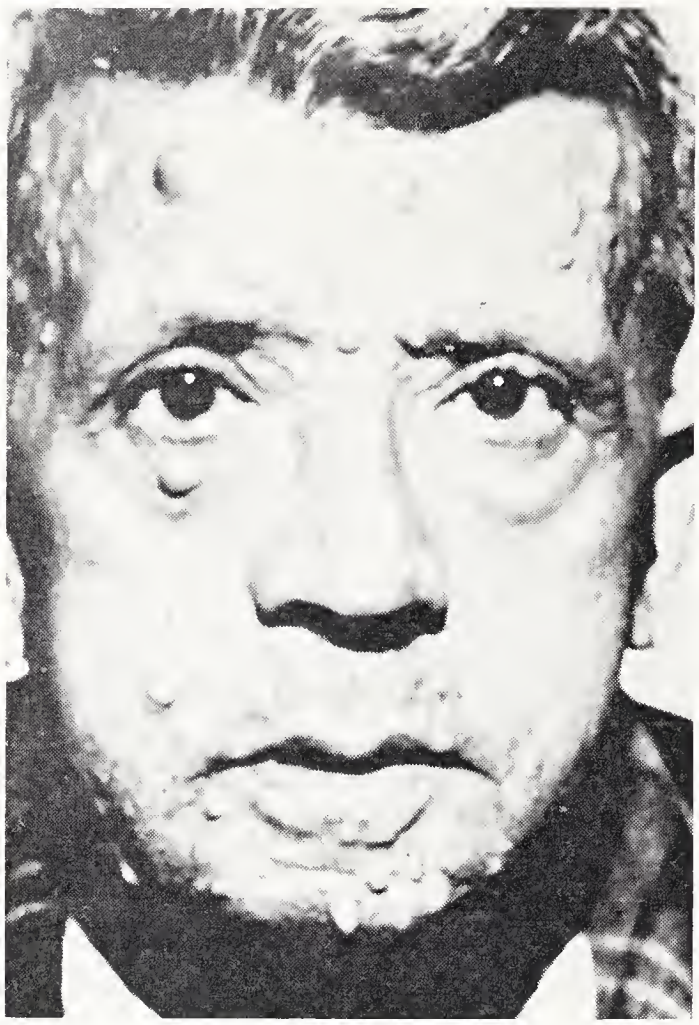


FIGURE 1: This patient presents with multiple sessile and pedunculated tumors on the skin, with cutaneous pigmentation. Diagnosis?

FIGURE 2: The above-pictured patient walks into your office complaining of difficulty and hesitation in relaxing his grip. On striking his tongue with a percussion hammer, a small sustained contraction with slow relaxation appears. Diagnosis?

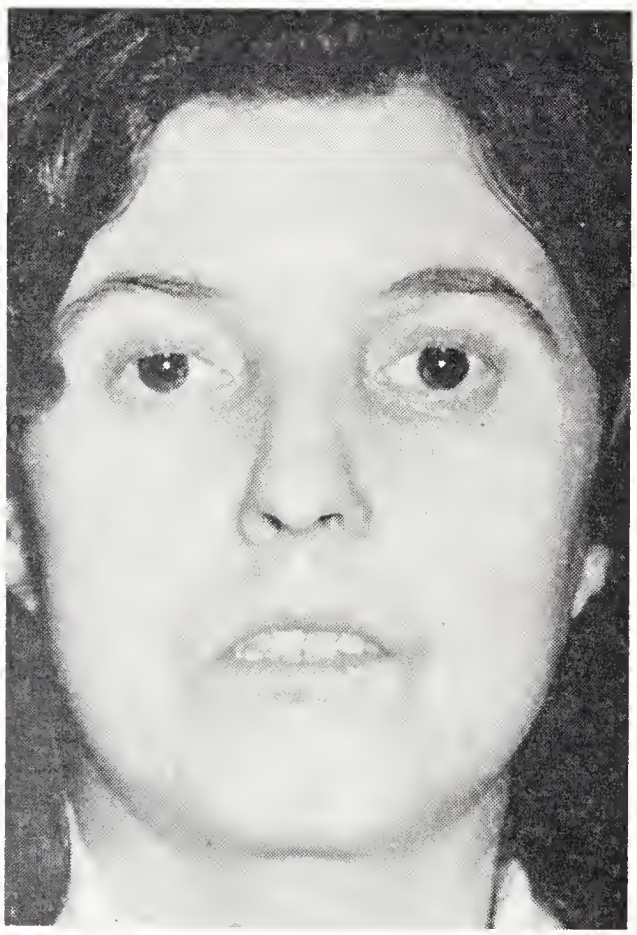


FIGURE 3: Note the masked facies. The patient complains of difficulty swallowing and talking. Diagnosis?

FIGURE 4: This is a child with micrognathia, low-set and abnormal ears, webbing of the neck and a host of other congenital malformations. Name the chromosomal abnormality.

FIGURE 5: Note the coarsening of the facial features and in particular the prognathism. Chief complaint: headache. Diagnosis?

FIGURE 6: Note the butterfly rash. Diagnosis?

FIGURE 7: Although a T-totaller, the patient was often accused of being an alcoholic. Diagnosis?

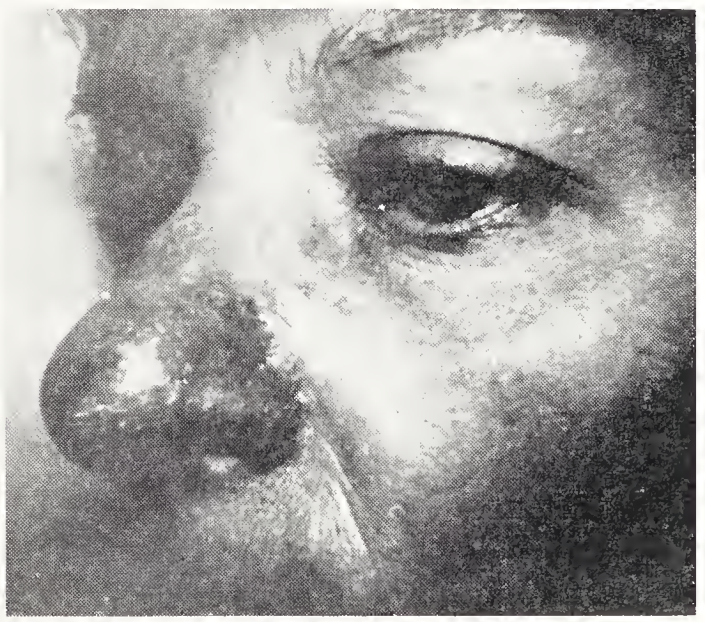


FIGURE 8: The patient is a 19 year old conscientious, industrious medical student who developed the above-pictured lesion just before the beginning of final examinations. Culture revealed a prolific growth of E. coli. Diagnosis?

See page 127 for answers

Urban Practice

W. Edward Armour, M.D., M.C.G.P.
Toronto, Ontario

In considering general practice in a metropolitan area, there will probably be some duplication of subject with those articles written about practice elsewhere, but much that will apply only to cities. General practice varies greatly, not only between different parts of the Province, but even within the city. The availability of hospital beds, the amount of consulting done, and the economic, social and educational status of the people in one's practice all make a difference. I have the impression that, in a large city, there are more elderly people, transients and "carriage trade", and fewer "medically indigent".

What follows is based, therefore, on the experience of one physician, and on conversations with others, but may contain much that does not apply everywhere, and is probably not comprehensive.

To succeed in general practice to the satisfaction of the public, only two qualities are needed: availability and helpfulness. This is true in the city where consultant help is always available; in the country it is less so, although with present ease of transportation it is usually possible to get a difficult case to hospital even in remote areas. To succeed to the satisfaction of one's conscience, and in the opinion of professional associates, a third quality is needed — that of knowing when you don't know and not being ashamed to admit it.

A family physician in a metropolitan area does less of his own major work than in smaller centres. On the other hand, it is possible for him to organize his time better, and the facilities and conveniences are greater. The populace has more settled habits, and will adhere to office hours better than in the country. A first class answering service such as that provided by the Academy of Medicine in Toronto makes life much easier. The doctor is closer to staff rounds in teaching hospitals, good medical libraries, and consultant services. The proximity of the provincial laboratory and of several good private medical laboratories is a great convenience. The latter will send technicians to the house to take blood, and report results the same day.

The duties and functions of a general practitioner in a large city may be outlined as follows:

Availability

Once a doctor has taken on the responsibility of personal physician to anyone, he is obliged to be available himself, or to make certain that someone else is. A patient must feel that he can get help at any time from him, or through him. This sounds like a tall order, but is really not so formidable. Genuine emergencies, which require you to drop everything and go at once, are rare. (Confinements are an exception; they must be allowed for, of course.) With experience, it is possible to decide more and more the degree of urgency over the telephone, and one is often able to treat the case without making the call. I have found it to be a good rule to insist on getting as much information over the telephone before going. This occasionally leads to a little argument from the over- and under-priviledged, who are prone to order the doctor to come at once, but you can always tactfully argue that you have to know what to bring.

If you are definitely pinned down and can't make the call, it is usually possible to have someone sent by the Academy Emergency call service, to send an ambulance to take the patient to the emergency department of a hospital (if you can get said emergency department to agree, which is not always possible), or to find a friend in the vicinity who can go. However, if the patient is one of yours, yours is the responsibility to get things attended to: This is the first and great commandment.

Screening

On the family doctor falls the job of deciding whether or not the patient has anything actually or potentially serious. Much morbidity can be prevented by taking hold at the "trivial" stage. A general anaesthetic and several days in bed can be prevented by whittling away the edge of an ingrown toenail in the office, and several weeks' illness can be avoided by watching for incipient failure in a patient with arteriosclerotic heart disease.

The number of neuroses, or anxiety states to use the more polite term, may surprise anyone first starting in practice. These are not necessarily chronic, and are usually only too happy to be told that their troubles are emotional, or due to fatigue. Hypochondriacs I find to be rather rare, as compared with the situation in the outpatient clinics. They need help, as do alcoholics, but also firmness. It is a good plan to assure both these types that you will do your best for them, but only during regular hours, and not at the expense of other patients' time. It must be remembered, too, that even hypochondriacs can get cancer, and I have sometimes stopped the recital of a spate of symptoms

by pointing out that if the patient cannot be a little more critical of the importance of them, it may be very difficult to sort out the ones that may represent serious disease.

Care in the Home

This, to my mind is the most interesting part of medical practice. A goodly part of family practice is made up of chronic and subchronic cases. Further, with hospital accommodation as tight as it seems likely to be here for the next decade, many fairly serious conditions will continue to be treated at home. The family doctor learns to be fairly good at improvisation, to judge character by the contents of the dresser and bedside table, to assess social problems quickly from the general set-up, to employ psychotherapy while accepting a cup of coffee, and many other things. His clinical methods will be modified by what can be carried in the bag, or found in the kitchen. The W.B.C. pipette is gradually discarded in favour of the smear, since slides are easier to carry, and he learns to get along with the minimum of X-rays. He usually accumulates a roster of chronically disabled cases, who have to be seen regularly; they can be a terrible nuisance at the height of the virus season, but come July he appreciates the work.

Preventive Medicine

This involves more than might occur to one at first thought. A patient once suggested rather wryly to one of my friends that he should pay him when well, and stop when he was ill, after the Chinese fashion, and my friend replied that he would be happy, as long as he was given complete supervision over that patient's way of life.

Regular check-ups, prenatal care, well baby care, immunizations and supervision of chronic cases to keep them on their feet are fairly obvious, but equally important is the attempt to keep after people known to have unhealthy habits: tense business men, hard social drinkers, despondent and tired housewives, and victims of overcrowding, dirt and ignorance. A good liaison should be established with public health nurses and other welfare agencies in the appropriate areas. In Toronto, the Social Planning Council issues a useful handbook of the agencies from whom help is available. Some of the people mentioned above cannot be changed by a frontal assault, but much can be done by insidious inunctions of propaganda and a bit of flattering attention.

Public Service

It is generally agreed that the best P.R.O. for the Profession is the individual doctor.

The term "Public Service" I use to include a wide variety of duties incumbent on a doctor on whom the community depends. In a large centre like this, it is fatally easy to let George do it, unfortunately.

First, there is availability for emergencies outside one's own practice, such as accidents, people who have no doctor, and disasters. I have already referred to the Emergency Call Service of the Academy which, I may say, paid my office rent during the first year of practice. Inevitably, the people seen through this will include a high proportion of the feckless, improvident, vicious and psychopathic, but physicians are supposed to pass on a person's worthiness after attending to his needs, not before. Most of the work takes place at night, and collections are poor. However, one sees life, collects a bit, and gains experience and a reputation, and a few good patients stick, and bring others.

Secondly, there is the class of "medical indigents" — not too large at present. These are the people who can just make ends meet when well, and who fall between the props of welfare, insurance and private savings. They can't pay fees — not regular ones —, can't afford medicines, can't get to clinics because of loss of time from work or inability to leave their many children alone, and are often rather sensitive about it. They constitute quite a problem, but not a severe burden. In my humble opinion, any physician in general practice who isn't carrying a few of them is doing less than his duty as a physician.

Third, public service may mean assisting on committees of various sorts, talking to local groups (always as a representative of the profession — see the Code of Ethics), and attending free clinics.

Care of major illness

This is more apt to be relegated to specialists or to public wards in this city than it is in smaller centres. This is not completely so, and the relegation may not be complete. There is no room for passing the buck, as the family doctor has to do the after care, and will have to be familiar with the case. Furthermore, the family will never forgive him if he doesn't look in occasionally, and patients sent home from public wards are apt to precede the copy of the Final Note by at least two months. One must keep in the picture; moreover, it's instructive and earns one the respect of the hospital staff.

Pot Boilers

These are good things to have early in practice. Part-time employment is often available with the D.V.A., insurance companies, small industries and so

forth. The extent to which they may be allowed to interfere with private practice will have to be determined. Later, as practice grows, it will be necessary to drop some, but many doctors keep one on as a foot in the door of full time employment later in life.

In summary, the function of a general practitioner in a large city is to be the family physician, the person to whom people turn for help when in medical trouble. The range of duties is wide, and the doctor must decide, having regard to the circumstances of his practice and his own abilities, how widely he will spread himself.

Problems Related to Family Practice

Clinical. These need little consideration here. As mentioned above, one's clinical methods will be modified by circumstances and experience, usually in the direction of streamlining. One comes to rely more and more on history and physical findings, plus a sort of sixth sense that comes from keeping the sensorium and frontal cortex in a receptive state. Much less "investigation" is done in family practice than in training hospitals, of course, but the general run of cases tends to be more straightforward. It's the toughies that fetch up as teaching cases, usually.

Organizational. The military principle of economy of force applies strongly once practice becomes busy, and so does economy of time and energy. It will be found, as practice becomes better established, that *usually* ones patients become more considerate. If they don't, the fault is in the doctor for letting them get away with it. It should be made plain to them that a tired and irritated physician cannot give them the best attention of which he is capable.

As soon as possible, arrangements should be made for exchange of evenings and week-ends off with a reliable associate.

Seeing patients outside of regular hours should be the exception. You can't possibly arrange office hours to suit everyone, so it is well to be firm about this. The times for hospital visits, house calls and office hours will vary according to taste and circumstances. Leave room (a) for unforeseen circumstances and (b) for paper work.

When making house calls, it is well to plot a course before starting, and if your secretary or wife is tending the 'phone, leave a list with her. I myself found that, by arranging to see patients along a definite path through the city and leaving those close to home until last, I was able, in afternoon traffic to cut my average time per house call from 28 minutes to 21 minutes, travelling time included.

Administration. Keeping proper records has been classed among the attributes of a good physician. With the growth of insurance plans, which often demand a carefully itemized statement of account, I have found that having a portable record system is best. Bedside notes are better and more apt to be done, than those made in retrospect. Most family physicians can't afford a full time secretary at first if ever, so administration should be streamlined and overhauled periodically. Things to be kept track of include:

clinical notes
follow up of investigations
follow up visits
correspondence
telephone calls to be made
fees charged
fees received
bills to be paid
reports to insur. companies and prepaid plans
equipment & expendables needed
business expenses
reports for benefits and special purposes, (death certificates, report for disability pensions, Workmen's compensation.)

A recent rather cursory time study done by a group of G.P.s indicate that probably 2/3 of the working hour is spent in the presence of a patient. If and when government enters into the picture, experience leads one to believe that this ratio will be reversed without financial provision being made for extra secretarial help. This aspect of practice should not, therefore, be neglected.

Having tried it, I do not think a dictaphone is money well spent for a family physician. Get an electrocardiograph and a sigmoidoscope instead.

Economics

The economics of medical practice at present, in this part of the world, are the subject of some controversary, and will probably continue to be so. A family physician in a Metropolitan area doesn't usually make much from large fees. I believe I am right in quoting a P.S.I. representative as stating that about 1/3 of all their benefits are paid for individual office visits.

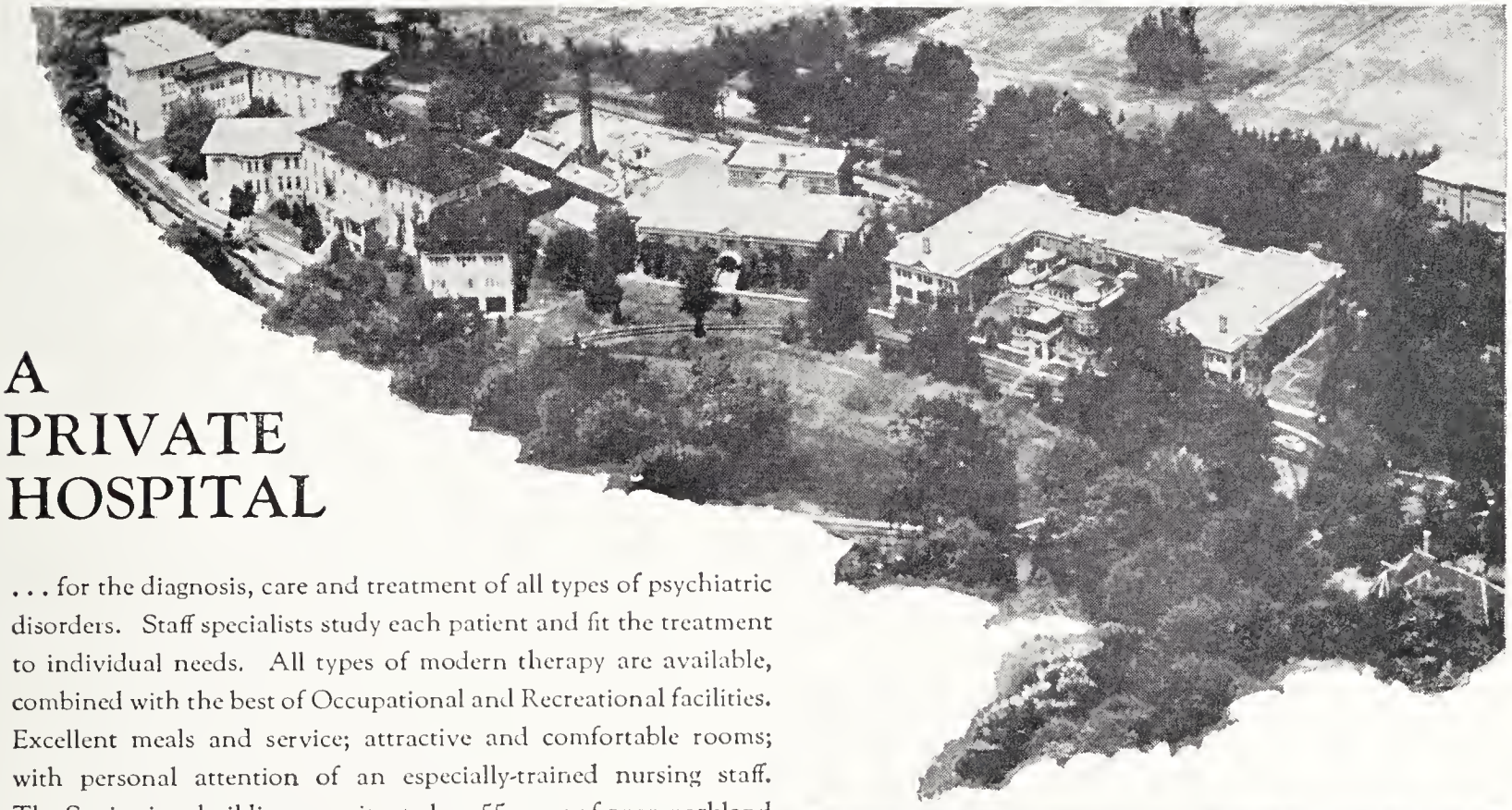
It is worthy of note that the medical profession, in the 17th Century was the first to expound the Marxian principle "from each according to his ability . . . to each according to his need." It is equally wrong to undercharge and overcharge. With increasing regulation, however, there seems to be some danger that our consciences may undergo a diffuse atrophy. There is some danger that we may be asked to dilute our loyalty to our patients by loyalty to health schemes.

The problems in the future, which today's students and internes will have to face, seem to me to be re-

lated to their place in hospitals, their relations to the government, and economics. I find it hard to believe that the G.P. in Ontario will ever become the rubber stamp that he seems to have been reduced to under certain National Health Services, because of a tradition of good personal service in the community. Further, the more a G.P.'s functions are taken over by a specialist, the less use the specialist becomes, as such. In this area, certainly in the centre of the city an excellent symbiotic relationship exists between specialists and G.P.s and not infrequently the specialist sends more cases to the G.P.s than vice versa. The family physician of Toronto is tending to drift toward doing more internal medicine and less procedures. This does not pay as well as it should, and under systems of payment that are regulated closely, one has to do some pretty hard arguing to be paid for spending more time than the minimum with a patient. However this right must be jealously guarded if we are to preserve our status as physicians.

"Why go into general practice?" Especially, why in a large city?

As to the second question, there is no good reason. The smaller areas need more physicians — I hold no brief for big cities, but was born here and all my friends are here. Otherwise, I would probably be practising where my summer cottage is, and coming to Toronto for my holidays. But why specialize? Unless one has a definite yearning for clinical research and teaching, general practice is more fun, there is more variety and more intimate contact with the public. I don't think I work as hard as some surgeons, who teach, do research, operate, consult, and then get out of bed to operate again. Clinical research is possible while doing general practice. In particular it is possible to make the general clinical observations which precede the choice of a subject for more intensive research. But the greatest satisfaction is the personal stake in a practice of my own, to do the best I can with, with the comfortable knowledge that there is a band of brothers in the background on whom I can call for help when needed.



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G. S. BURTON, M.D.C.M., *Medical Superintendent.*

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GUELPH, ONTARIO

Rural Practice

A. G. Logan 6T6
Lindsay, Ont.

Today many rural areas and small towns desperately need doctors to engage in general practice. The trend to prolonged post-graduate work in the many fields of medicine ties the new specialist to the bigger centres and fully equipped hospitals. The cultural and social attractions of the urban communities further reduces the number of young doctors for rural general practice, and leaves many outlying areas without good medical care. Fortunately, there are some doctors who find happiness, satisfaction and prosperity in pleasant, quiet areas.

The following article is based upon observations gleaned in a rural community, Lindsay, a southern Ontario town of 10,000 people. It is not to be inferred that every small population center in Ontario is exactly alike, but it may be supposed that there will be many similarities in many cases.

Lindsay offers many features of a suburb of a big city but is still functionally distinct in comparison. The inhabitants, like those in a suburb, have easy access to a central shopping area, a theatre, a recreational centre, public and high schools, churches and a hospital. However, in contrast, the community is a closely knitted autonomic unit in which one part is depended on the rest for its well being and coordination. A disruption in a given division, for example, a strike in a key industry will have detrimental consequences for the whole town. Therefore, there will be an intimate binding force between inhabitants resulting in the doctor being closely associated not only with the medical but also the social and financial problems of his patients. To think that the town doctor is cut off from educational centres and metropolitan attractions is a misconception. Today he is within easy driving distance of a city and may be said to practice in an area comparable to one of the many localities of a metropolitan community.

The district hospital is usually located in the largest town of an area twenty to thirty miles in circumference. These hospitals vary in size from a one-hundred to a three-hundred bed capacity, and have most of the facilities essential to good quality health services: x-ray equipment, electrocardiographic machine, anaesthesia equipment, modern laboratory, operating rooms and emergency department. Usually all the doctors in the area have admitting privileges and are allowed access to all hospital facilities. The only restriction for the general practitioner is his right to open the abdomen and to do major surgery.

The general practitioner will come in contact with problems touching on almost every branch of medicine. He must be prepared to diagnose and to treat any illness for he may not have readily available the particular skill of a highly trained specialist. His medical practice will require him to have a broad knowledge of obstetrics, paediatries, surgery, dermatology, psychiatry and anaesthesia.

In outlying areas, except for the Caesarian section, almost all obstetrical work is handled by general praetitioners. Each will deliver approximately one hundred babies a year. In most cases the mother delivers the baby naturally, In more difficult situations, however, the doctor uses forceps. Obstetries gives many doctors the first footholds in building medical practices; pediatrie care naturally follows the baby's delivery.

Treating children is probably the doctor's most rewarding works. Neglected, they can die quickly. To good treatment, they respond twice as fast as adults. Pediatrie cases vary from upper respiratory infections and otitis media to urethral obstructions, enteritis and poliomyclitis. In order that each of these problems may be diagnosed and treated properly, the general praetitioner must develop self-reliance and skill.

Surgery on the whole is confined to relatively simple procedures and is usually practised in the hospital. Tonsillectomies, multiple tooth extractions, wound repairs, removal of cysts and setting of fractures are performed by many general practitioners. However, appendectomies and other emergency abdominal operations are carried out by general surgeons one of whom is always on call in the hospital.

For the general praetitioner, the working day starts early in the morning. Besides giving preference to emergency situations, house calls are made first followed later in the morning by general rounds in the district hospital. Since patients may often live far apart and the country doctor may have to drive eighty or ninety miles a day, a charge of fifty cents a mile is added to the bill in order to induce more patients to come to the doctor's office and to offset the expense of driving a car. Office hours are normally from two to four-thirty during the week but office work is not usually finished until six o'clock. Three evenings a week are devoted to evening office hours which can extend till ten or eleven at night. Literally the rural doctor is always on call and to relax he should "holiday" out of his community.

Why do doctors settle in rural areas? Many men dislike the pressures of city life and prefer a less competitive country practice. Some were brought up in small communities, are conditioned to rural mannerisms and love country life, with its easy access to hunting, boating, and fishing. Others have little interest in city topics, cocktail parties and social obligations. Perhaps the chief attraction of a rural area is the ease by which the young doctor in need of immediate financial return may establish himself in general practice.

The expense of setting up an office will vary with the size of the locality. Most doctors in a small town can furnish their offices for less than one thousand dollars. Their equipment includes an examining table, a desk and chairs, a lamp for pelvic examinations, a cautery unit, and a minimum amount of drugs. The rural doctor, farther from hospital and drug store, may have to invest in an x-ray machine and in a greater variety of drugs. Their offices are separate from their living quarters and usually consists of a waiting room, an office equipped with examination facilities. However, the rural doctors have two to three examining rooms with each equipped for a specific type of examination, and a small room for x-ray equipment and drug dispensary.

The status of the general practitioner in the small community is high. He commands the respect, trust and faith of all his patients. He must act discretely and with integrity for every action he performs is broadcasted, rumoured and commented upon. In rural areas especially, his unique education and experience force him to assume the role of lawyer, revered friend and financial advisor. He may encounter problems of criminal nature, which he must analyse secretly and solve discretely so as to avoid bringing embarrassment to an individual and his family. Many financial crisis are averted directly and indirectly by his personal financial support or his wise advice. Therefore, in many ways, the doctor is indispensable in the village and rural areas. The intimate doctor-patient relationship may give not only personal satisfaction, but also create professional interest by the analysis of the relation of sociological and psychological problems to the ailment of the patient, and of the degree to which the one factor influences and dominates the other.

The medical student who plans to do general practice in a small community should pursue a two-year internship. He should have an extensive knowledge of obstetrics, paediatrics, medicine, minor surgery and dermatology. A six-week course in anaesthesis would be invaluable to him. Completing these preparations, the young doctor should work for a year with a general practitioner.

In conclusion, general practice in a small community can be rewarding both personally and financially. The rural doctor must overcome his fear of being medically isolated, by reading, taking refresher courses and attending medical meetings. He must be able to work long hours and must have a sincere interest in people and their problems.

ACKNOWLEDGEMENT

I would sincerely like to thank those doctors in Lindsay and in surrounding districts from whom I received most of the information contained in this article.

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Abstract

Renal Hemangiomas, Proc. of the Mayo Clinic, Vol. 37, No. 21.

These lesions are benign and of unknown cause. When the renal hemangioma presents symptoms, they are usually gross, painless hematuria, or a hematuria associated with pain due to passage of blood clots or to interstitial hemorrhage. An unknown number of lesions never present symptoms. Diagnosis may be made by inference in a pitient who has gross hematuria and hemangiomas elsewhere in the body. Angiographic studies may be helpful. Nephrectomy, partial or complete is the treatment of choice in symptomatic cases.

F.L.

Frontier Practice

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The desire to treat the whole man in medical praetice is understandable and is a rational one. The ability to have relative compctence in the diagnosis and treatment of abnormalities in any of the body systems is necessary for anyone who so wishes to practiee. In view of the timidity of many young physicians to cnter the broad field of General Practice, may I give some advice. Compctence in this field can be maintaincd by anyone with avcrage intelligence, a deep interest in his fcllow human beings as individuals, and an above averagc desire to keep up with the developments of medical seienee in the whole field of medicine. If this last is lacking, then you would be wise to specialize so that the competition in the narrower field of practice might provide the stimulus to keep up. This is in no way meant as a detraction to the specialist, many of whom are energetic practitioners who have selected their specialty because of a deep interest in a particular field.

I am writing this articlc to acquaint younger physicians who arc stimulated by the challenge of the whole field of medicine with the fact that there are still areas in Canada where a general praetitioner is just that — a General Praetitioner.

This article refers generally to the practice of medicine in British Columbia, in the hospitals owned and operated by the Board of Home Missions of the United Church of Canada. (Hazelton, Queen Charlotte, Bella Bella and Bella Coola.)

I would like to rcfer specifically to the practicc in the area served by the 25 bed Bella Coola General Hospital. This is situated on the eastern end of North Bentinck Arm, on the Coast of B.C., 200 miles north of Vancouver. The nearest hospitals are Ocean Falls, 65 miles north over inlets often made impossible by storms, and Williams Lake over 300 miles of gravel road, mountainous in part, to the east. The population served is 2,000, of which 700 are native Indians (Anahim Lake and Bella Coola bands). The main industries are logging, fishing and ranching.

The hospital has a medical staff of six graduatc nurscs and two physicians, and is equipped to handle most emergeneies encountered.

The operating room is as modern as possible in a 33 year old frame building. It has a conductive tile floor, a modern movable stainless steel operating table, a moveable ceiling-mounted spotlight, a Boyle anesthetic machine, and a suction unit. The case room and nursery have a resuscitator and ineubator. The X-ray room is lead lined and has a 200 M.A. X-ray unit equipped with a spot film device for taking bowel X-rays.

In the Outpatient Departmcnt, the praetice ranges through all the fields of medicine, veterinary cases and dental extractions. It is equipped with an E.C.G. hyfrecator, electric cast cutters, and has two examining rooms, a lab, a fully equipped dental room, and a pharmacy with nceessary drugs.

As well as handling regular office practice, one ean never be sure when emergency calls ean eome in, by radiophone from logging camps in the surrounding inlets, or by telephone from the Anahim Lake area. The call may be to inform you that a death has occurred in the logging industry. If so, as coroner for the district, you will fly to the scene of the accident accompanied by the local R.C.M.P. constable, and investigate the seene of the tragedy and question witnesses in preparation for an inquest. This will happen several times a year.

Fortunately, most emergeney calls are not to report death but rather an accident, illness or premature labour: eases in which the patient may be helped. These are usually brought to hospital by air, boat, or over the road by pick-up truek with the patient covered by blankets and resting on a mattress or on top of a foot of hay.

Aceident victims have their injuries assessed, usually with the hclp of the X-ray unit. Here you must be your own X-ray technician and radiologist. The patient will be admitted, sedated if permissable, the fractured limb clevated and ice-bags applied. If treatment by closed reduetion will give a good result, we will treat him at our own hospital. If shoek is present, an IV will have been started in the X-ray room by the physician, and a sample of blood drawn. This will be typed immediately and the rest allowed to clot so that serum will be available for cross-matching if blood is needed.

Whcn blood is required, the blood donor book will bc consulted. This contains the names of most adults in the community whose blood has been typed by the hospital staff at the community fall fair — in readiness for emergencies. The R.C.M.P. are now called and given the names of half a dozen people whose blood type coincides with the patient's. Usually within ten or fifteen minutes, the first donors begin to arrive and they are cross-matched immediately using

thc major cross of donors' cells and patient's serum. This is checked carefully at regular intervals for twenty minutes and if no clumping appears under microscopic examination, the blood is used. The blood is taken by the physician in O.P.D. using citrate bottles supplied by the Red Cross. In this manner, fresh whole blood can be running into a patient within an hour from the time of his arrival at the hospital.

Meanwhile the time of repair of fracture or injury is now considered and this will depend on his condition, whether shock is a factor and when he last ate. Most of our major traumatic cases are handled under general anesthetic with induction by Pentothal and maintainance on a balanced anesthetic of nitrous oxide, cyclopropane and oxygen. This is administered by one physician as anesthetist while the other one performs the orthopedic procedure of reducing the fracture and applying the plaster. A post-op film is taken to confirm results. A poor reduction, particularly in fractures of the type which are unstable when reduced, suggests the need of specialist care and probably open reduction. In these cases the plaster is left on for splinting and as soon as the patient's condition is satisfactory, he is transported to Vancouver by plane or weekly steamer (often depending on the weather.) This is also the plan of treatment for those cases where it is initially obvious that the fracture is complicated and will require specialist attention. Then, no attempt at reduction is made.

For abdominal surgery, we usually use pontocaine spinal anesthetic. Where this is contraindicated we use the balanced anesthetic mentioned above and add ether to the combination via the gas machine, to produce the required relaxation of abdominal muscles. In this line of surgery, our emergency work is usually confined to appendectomies, perforated ulcers, perforating wounds and such elective work as removal of ovarian cysts and repair of umbilical and inguinal hernias.

Our E.N.T. work keeps us busy in that otitis media is a common problem and particularly suppurative otitis in the Indian people. Since the inception of antibiotics, mastoiditis is not a common problem and when a case of mastoiditis requiring surgical drainage arises, it is referred to Vancouver. We do a large number of T & A's: the younger ones under vinethene and ether anesthesia, the older ones nasally intubated using anectine and then carried on balanced anesthetic. This gives good control for all nose and mouth procedures and is also used for removing rotten teeth under general anesthetic.

The obstetrical practice is not a large one. There were 72 babies born in hospital in 1961. However it is interesting and produces a variety of cases. Most of the cases are handled without general anesthetic. We rely on demerol and phenergan analgesia with occasional help from the trilene mask and pudendal block or local anesthesia for the episiotomy. In this regard we try to stress the principle that a relaxed mother who has confidence in her physician and who is fully informed about what is occurring, will be a mother who rarely needs anesthetic for delivery. We don't do Cesarean sections as an elective procedure but are prepared to do them as an emergency.

We are prepared to resuscitate our newborns, if necessary by exposing the vocal cords by laryngoscopy and aspirating mucus and where necessary, insufflating the lungs.

Pneumonia is a common problem, particularly in infants and children. Due to the distances involved in the area we cover, we not infrequently see full-blown cases of lobar pneumonia when some of these people finally get to our hospital. Last winter we received a call to make an emergency run to Anahim Lake, some 93 miles over mountainous roads. Several small children were ill with symptoms suggesting pulmonary disease and the nursing sister at the Roman Catholic Mission on the reserve, was deeply concerned. In view of the rapidity with which these children were deteriorating, the resident priest, Father O'Brien, started out with the patients in his jeep and met us half-way. He had with him three toxic youngsters under two years of age all suffering from pneumonia. There had been an epidemic of influenza in the Indian village a week or so earlier and this was an aftermath. One of these babies in particular was critically ill and required intensive nursing care with oxygen for a time before responding to therapy.

Tuberculosis is still a problem we can't underestimate, and although it is not rampant as it once was, it has to be considered high on our index of suspicion in any pulmonary disease. Every adult admission gets a full size chest X-ray and every youngster is tuberculin tested. The Indian people in the Anahim Lake district have the highest incidence of tuberculosis among our patients, probably due to their lower standard of living. It is no longer too difficult to convince these people that they should go to the Sanitarium for care. In the older days, many of the cases were far advanced before diagnosis, and when sent to the San, never recovered to return to their people. "We were sent away to die in a strange place among strangers." Now, with facilities for earlier diagnosis, and with anti-tuberculous drugs, most cases return to their homes within a year or two.

In the past six years, we have had two cases of

tuberculous meningitis, and each year we have 4 or 5 cases of 'unknown purulent' meningitis. Most of these latter ones turn out to be meningococcal infections, but others are 'unknown' from start to finish, and are carried successfully on the therapy as recommended for treatment of unknown purulent meningitides in the Sick Children's Hospital manual.

One thing which never ceases to concern our summer interns, is how we are able to practice medicine with the searcity of lab tests at our disposal. I think this is a mixed blessing. We can do most of the essential ones and for the rest we have to learn to do without them by digging a little deeper into our own clinical judgment. We do routine Hb, white and red cell counts and sed rates as well as blood smears. We can do rough blood sugars using Ames dextro-test tabs. We can do our own baeteriological stains on smears, CSF residues, and precipitates. We do routine urinalysis on each hospital admission. Wasserman and Rh determination is done routinely on every prenatal case: blood is sent to Vancouver for the tests. When the occasion arises for other more exotic tests such as P.B.I. and B.U.N. these are also sent out.

Occasionally an emergency call will result in a very unusual experience. My associate, Dr. Holly King (Toronto, 5T7), had one last spring when he was called to eome and help a cow deliver a retained placenta — and they just don't make gloves long enough for bovine birth canals.

I had an unusual call two months ago: we were notified at 9 p.m. that a young woman who had just ridden fifteen miles into Tweedsmuir Park over rough broken terrain had been rolled by her horse and suffered a dislocated hip. Her husband had turned around and ridden back to the road and was notifying us. There are no roads into that section of the park and the only human way to have moved her was by helicopter. While the R.C.M.P. and Forestry officers arranged for this with the R.C.A.F. air-sea rescue unit, I started off with the other R.C.M.P. eonstable. We drove fifty miles up the road where we met the husband who had obtained horses for us, and at three A.M., we started in on horseback through serub pine forest and eventually, we climbed into the Rainbow Mountains, across alpine meadows broken at intervals by deeply recessed creeks. We arrived at the patient by seven A.M. and found her resting eomfortably in a tent, in front of a fire which her son had kept going. We also then found out that prior to leaving for help, the husband had given his wife four aspirin and a half a bottle of rum, and with the son holding her down, he had pulled on her leg until it clieked back in. She was now fairly eomfortable as long as she didn't move. I gave her some demerol IM (admittedly a little late), and we kept ourselves warm by the fire for five hours until we heard the helicopter's engines. We then put great piles of green grass and shrubs on the fire but the heavy gray smoke seemed to blend with the swirling patches of low-lying cloud which was hanging to the sides of the mountains above us. It is unlikely they would have noticed us at all except for the faet that we had brought in a walkie-talkie radio from the Forestry Department, and were now able to direct the pilot to our position. Fortunately, I was able to eome out with the patient in the helieopter, otherwise I am sure what was merely red would have beeome blistered.

These frontier areas are beautiful places with snow-capped mountains, tree-clad slopes and river valleys making it a photographers' paradise. The population, whether white or Indian, is eomposed basically of hard-working, self-sufficient people, most of whom are very appreciative of their medical care. This fact, plus the unsurpassed hunting and fishing in the area, makes it a real pleasure to praetice medicine here.

I think one of the reasons we are able to provide this type of medical eare, is because of the dedieation, training, and ability of the rest of the hospital staff to meet the many emergeneies and lesser interruptions with an equanimity which provides a happy restful atmosphere so neeessary for the suceessful operation of a small hospital.

The selection of physicians for sueh a practiee is important. It was an inspiration to have Dr. Hugh Rose (Toronto 5T6) come and work with us for two years before leaving for overseas mission work in Korea. I am thoroughly enjoying my association with Dr. Hollister King who has worked with us for three and a half years and who is on a year's leave of absenee to do post-grad work in Toronto, on the G.P. course. At the moment, Dr. Carol Voaden (Toronto 6T0) is doing an excellent job of filling in for Dr. King. The quality of medical services provided in any area is going to depend, to a great degree, on the training and ability of the medieal personnel, and the kind of vision they have for serving mankind in the field of medicine. So far we have been most fortunate in being able to obtain people of such high ealibre.

Finally, the successful General Practitioner is one with the above average desire, previously mentioned, to keep up in all branehes of his Scienee. The Art of Medieine will develop with praetice and this will be limited only by native ability; but the Science of Medicine must be learned. In this respect, the College of General Practice, with its stringent requirements, is

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Profiles

Dr. M. A. Johnston

Dr. Johnston was born in 1919 in the small town of Eston, Saskatchewan. He lived on a farm near there until he went away to university. During that time, he became a close friend of a general practitioner. As a result of their many discussions, by the time he had reached high school, medicine was his choice of a career. He studied first at the University of Saskatchewan which he left in 1939 with a B.A., and continued on to get his M.D. at the University of Toronto in 1942. In his last year, he graduated with honours, held the Presidency of Alpha Omega Alpha, and received the Chappell Prize in Clinical Medicine.

After graduation, he interned for one year at the Toronto General Hospital, and then joined the Canadian Armed Forces. With them, he served as a medical officer in military hospitals both in this country and with the 23rd Canadian General Hospital in England. He returned and received his discharge in 1946, following which he completed a senior internship at the TGH. He subsequently accepted the Arch Hutchison Fellowship to do basic research in pharmacology at Yale. There, he met again the complex problems of the thyroid gland, and he was fortunate to be working at one of the few centers in North America where the techniques of radio-active iodine were under study. This field caught his interest like no other, and he has continued in it ever since.

From Yale, he came to Toronto again, first as a Fellow in Medicine, and later, after getting his FRCP he joined the staff of the Toronto General Hospital. From clinical teacher, he has progressed to his many current positions. He is in charge of the Thyroid Research Laboratory and the Medical Endocrine Clinic. He has been on the Examining Board for the Royal College of Physicians for the last three years, and is presently in charge of second year teaching in medicine.

Dr. Johnston has been married for nineteen years and has two daughters. He is a keen baseball and hockey fan, plays the violin, and is an excellent gardener. But if one could make any personal generalizations about him, it would be to say that he is extremely interested in people. This is one of the reasons that he enjoys medicine so much and why he stresses the doctor patient relationship to all his students. It is also the reason that he gets so much pleasure from reading world history, for that is nothing less than the interplay of individuals and their personalities on a very large scale. Lastly, it is the reason he enjoys teaching so much. To him, it is not a simple routine whereby facts are transferred to large groups of students; it is a very complex process on which he expends a great deal of energy. For while he lectures and speaks to many students, he always teaches the individual, and this is, after all, the root of the matter.

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an excellent way to keep up to date. The journals help when there is time to read them. I would like to suggest that people in medical centres in far-flung areas, have another good means to 'keep up' at their disposal. This is by encouraging specialists in various fields to come and make visits, regular if possible, to the area. This is helpful in two ways. It gives the specialist a fuller appreciation of the conditions under which we work, and a chance to relax at hunting or fishing. In return for this, we enjoy the companionship of a professional confrère and are able to pick his brains. We have been carrying out such a program at Bella Coola for the past five years and have been most fortunate in obtaining some excellent men in this way.

In conclusion, I might say that to me, general practice provides a stimulating challenge in the treatment of the whole man — a challenge that cannot be equalled when reduced to one specialty. Time does not permit me to deal with all the ordinary problems of counselling in family difficulties which plays such a large part of the average 'family doctor's' practice, nor of going into all the aspects of community participation expected of and enjoyed by the medical practitioner in the outlying areas. I think it is sufficient to say that no fuller or more satisfying life can be lived.

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Medical Horizons

THIRTEEN IATROGENIC HOURS OF SCHIZOPHRENIA

Stan Litch, 3rd medical year, during the preceding vacation period, was employed by the State Hospital in Concord, New Hampshire as a summer intern on the admission service of this 2700-bed psychiatric hospital. In mid-July, he volunteered for a test dose of the psychotomimetic drug — Mescaline under the auspices of the Arthur P. Noyes Institute for Neuropsychiatric Research. The following is an account of his subjective experience with this drug as recorded for the Institute, a week following the experiment. Wm. S.C.

At 9 a.m. on July 17, 1962, in the Psychology Department at the New Hampshire State Hospital I drank a little papercup of water in which was dissolved 400 mgs. of mescaline. In the room at that time were Dr. Niswander, Dr. Siegel, Mr. Mueller and a student who was to act as the scribe throughout the day. The next half hour or so we all sat around in our chairs making idle conversation waiting expectantly for any change. Blood and urine samples were collected.

My first symptoms of change began to occur shortly before 10 o'clock. I felt slightly numb in my extermities and by head began to feel full and heavy. I began to snicker and giggle unexpectantly. This was the first time I felt as though there were things happening to me over which I had little control. Many times I laughed heartily without any provocation. I seemed to enjoy this inappropriate laughter, and I am sure that under ordinary conditions I would have found this quite upsetting. Mr. Mueller then began the psychological testing. Now I was leaning with both elbows on the table, and constantly rubbing my face and scratching my scalp, although I wasn't itchy. I had great difficulty concentrating on the test questions. Several times I asked to have the questions repeated. I was still having those explosive little giggling episodes and I began to get annoyed at the number of times that people around me were asking me why I was laughing. I had already said that I didn't know but felt that they really didn't believe me now. Many of the tests were disappointing. I seemed to have little desire to organize any of the answers to the essay type questions. In the digit symbol test I stopped after completing several lines. I felt that I had done well enough even though I knew that I had done better the day before and it was expected of me to perform less efficiently at this time. On the Rorschach ink blot I recognized the patterns from the other day and gave what I though were similar answers. The testing completed, I returned to a more comfortable rocking chair and slouched down on it.

I was disappointed that I was not conjuring up any of the bizarre technicolor hallucinations that I had read about. I was still rubbing my face and hands occasionally and was beginning to feel warm and flushed. The laboratory technician came for another blood sample and suddenly I became quite frightened. Usually I can take a needle with little more than a momentary flinch, but now I was definitely afraid. As soon as the needle penetrated by skin I felt the needle climb in my vein, pass through my shoulder, and pierce my throat. I had the momentary taste of blood in the back of my mouth and my throat felt very constricted. When the blood sample was obtained and the needle removed I heard a bubbling noise, which appeared to me as if my blood had reversed its direction and was gurgling out through the hole left by the needle.

From this point on I had greatly increased auditory acuity and I was very aware of even the softest noise around. When the toilet was flushed in the next room, I practically went through the roof. Pots being banged in the kitchen two floors below sounded like some song I should know. I then began to doubt the reality of many of the things I saw. Although there was nothing specifically bizarre experienced, I did feel that things about me were dull and flat, with only two dimensions. I would look at things twice to ensure that they were real. I began to be quite apprehensive, feeling that I was losing contact with my surroundings. Dr. Niswander asked me the date and I was able only to give the month and day of the week.

The next sensation experienced was a feeling of heaviness on my right side. Concentration and effort were required to keep my head from dropping to one side. When I attempted to move to the other side, I suddenly experienced an emptiness in my head; also there was a heavy ball bearing which slowly rolled to the opposite side. I now had to reverse my efforts to keep from falling to the left. By nodding my head up and down, I could roll this ball back and forth in my empty cranium. I sat there for a few moments having fun playing with this ball much to the amazement of my observers.

It was then that someone suggested that we all go for a walk and I thought that this was a good idea.

Going down the elevator was a frightening experience. The noise of the motor was very loud and I became quite dizzy. Walking outside was a relief. I suggested a walk around the front of the building. In front of the building, I met another doctor for the first time. He asked me about my course in school at Toronto. I then proceeded to get very mixed up in trying to explain why our Medical School was 6 years instead of 4. Finally, I became so exasperated and frustrated at my inability to explain that I threw up my hands in disgust and turned away saying, "Aw, to hell with it." Going back to the room I was still dizzy and quite shaky on my feet. About a minute after getting off the elevator, I had diplopia and there was a hazy, colored outline around all objects and people.

In the room again the unpleasant side effects were becoming more prominent. My legs felt numb and tingly. I would constantly shift about in the chair seeking a more comfortable position, but never really succeeded. Abdominal uneasiness that I was beginning to experience was very vague, and what I would describe as slight nausea without any real feeling of impending need to vomit.

It was at this point that Dr. Siegel asked me if I thought there was any difference in my threshold for pain. I replied that I would "jump at anything", meaning that I would be extremely sensitive to any sensory stimulus. Glancing up from my coffee I realized that there had been a double entendre and I burst into laughter, spilling coffee all over the table, the rug, and my pants. I remember apologizing profusely and made some half-hearted attempts to mop it up. When quizzed, I was reluctant to explain the joke with its sexual connotations.

At one point I attempted to describe this sense of unreality that I was experiencing. It seemed to me then as though I was behind a wall, not in a protective or even in the observing sense, but merely that there was this sense of separation from those around me. During this restless period I threw a chair cushion across the room after stating that it was covered with terrible material. I kicked the table once for no apparent reason and felt a strange satisfaction after doing this.

The questions from my observers were coming quite regularly now and I was getting tired of explaining how I felt. There was also some frustration involved because it seemed that I had difficulty doing just that, — explaining clearly my physical condition and subjective sensations. This, I felt, at the time, was another disappointment of the experiment. I had been of the impression that under mescaline the subject became very lucid, verbalizing freely. My memory for recent events, I noticed, was becoming spotty. Names of people and places, as well as the previous day's activities, I was only partially able to recall. Instead of the numbness and heaviness now in my limbs, I felt generally light and fluffy, an airy feeling of being relaxed. It seemed much similar to the alcoholic glow or mellowness following several drinks. The only real unpleasant sensation then was the runniness of my nose. I still maintained an inappropriate laugh but this was occurring less frequently now. I was perspiring profusely on my back, armpits, and hands. I was told later that this was the time when my pulse was the fastest. It was 128 per minute and my pupils were widely dilated.

I was getting tired now and did not feel actually sleepy. It was getting to be lunch time and we all left for a steak house downtown in the car. I felt now that everything that was being said around me was for the purpose of testing my reaction to it. Even the waitresses, I suspected, were in on this scheme. I was passing out of the more or less euphoric condition of the morning into a lethargic, weak condition, that persisted throughout most of the remainder of the day. I volunteered little spontaneous conversation, partially because of this lack of comprehension, and also because I was beginning to feel so nauseated and mildly depressed. My anxiety increased when I found the table alternately dip in the middle and then sag to one side. I still felt my reactions were being tested and recorded. Conversation at the table seemed to change in the middle of a sentence. I was very frightened when I looked around and saw a previously crowded restaurant with only a few people in it now. It seemed that they had all left at once. After leaving the restaurant my knees felt rubbery and I was quite weak. I was determined not to act impulsively. I was later told that from lunch on I appeared disgusted and aloof from everyone, answering questions relevantly, but in as brief a manner as possible.

Going for a ride in the car I continued to feel miserable but enjoyed the warm air and sun. Passing by the front of the hospital Dr. Niswander asked me about a group of patients that appeared to be walking woodenly by. I said the first two showed extrapyramidal effects of drug toxicity and then asked if the situation had been "cooked up." My mouth was very dry now and I often licked my lips. It seemed we passed by many cemeteries on the way and I began to notice some visual distortions. I had to look at things twice to see if they stayed the same. A long line of cars parked along the curb looked identical, the same color, model and year. A "no passing" sign had the two "ss's" backwards. There seemed to be three or four double lines in the middle of the road sometimes. Things looked unreal and distant as though I was watching a movie. Passing

views appeared to change too rapidly; I'd look out one side of the car, see a small wooded lake, look out the other and see a large cultivated field, and look back again to see a small town that we were passing through. Olfactory sensations I experienced were very acute; for example, I could smell restaurants before we even passed them. New-mown hay by the roadside and a lumber yard were pleasant sensations to me.

After the drive we went back to Dr. Siegel's lab for the last blood sample at 4 P.M. I continued to feel terrible, the feeling one would have if made to get up too early following recovery from the flu. My thinking was still disorganized and I had difficulty explaining anything. My mouth and throat were parched and I drank several glasses of water. Those around me were reading feverishly and I thought they were trying to frighten me again. "How corny can you get" I thought to myself. When asked by Dr. Siegel about mescaline I replied that I saw no reason for calling it an enjoyable experience.

From here I was taken again for a drive, this time out to Dr. Niswander's summer cottage. Previously I had looked forward to this trip, being told on Monday that we would finish off the day out there, and I was sure the effects of the drug would be gone by then. On arrival at the cottage I slouched into a chair and said that I felt like doing nothing. I tried to read a newspaper but could not make any sense out of it. It took me quite a while to realize, too, that it was the same paper that I had read that morning. I refused a drink and cringed at the mention of food. One of the things that probably upset me the most was Dr. Niswander's suggestion in the early part of the evening that this lethargy I was experiencing was actually boredom, and this in turn might be the basis of my own personality, my overactivity and desire to be on the go merely a frustrated reaction against this basic state.

I felt gradually better from then on until about 10 o'clock when I could finally concentrate and talk reasonably fluently again. Following strenuous physical exercise I have felt physically exhausted, and similarly following extended mental effort like the annual pre-examination final push I have been mentally fatigued, but never have I experienced such a combination of these two types of tiredness. However, it wasn't until about 11 o'clock that I felt I could actually go to sleep if I lay down. I still felt very weak, but no longer nauseated or groggy. On arrival back in my room I undressed and went to bed as usual, possibly taking a little longer to get to sleep. I consciously experienced no dreams or nightmares. The following day at work I was still a little tired but there were no other hangover effects from the previous day.

A week later, looking back in retrospect at the day's experiment, I felt that my curiosity about psychotomimetic drugs had been satisfied. I doubt that I would be willing to do this again, the unpleasant side effects far outweighing any enjoyable delusional or hallucinatory sensation. From the few reports I have read, both clinical and non-professional, there seems to be a great range in duration of action and severity of side effects. Possibly, at a dose level higher than 400 mgs., the hallucinogenic action of mescaline would increase but not in direct proportion to the toxic effects.

Back working on the admission ward again, I do feel that for a while at least, I was actually "part of the gang." Inability to communicate effectively, I can see, is a frustrating problem with many of the patients, just as it was for me. Instead of a carefree dream-world, losing contact with reality can be a very real, frightening experience. The withdrawal of the schizophrenic who doesn't want to be bothered with anybody or anything, is now a common shared experience. This empathy for the psychiatric patient which I hope I retain, made the whole day's experience worthwhile.

Stanley Litch 6T4

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Abstract

Pheochromocytoma, Proceedings of the Royal Society of Medicine, Vol. 55, No. 6, June 1962.

Pheochromocytomas are tumours of the sympathetic nervous system which secrete excessive quantities of the catecholamines adrenaline and noradrenaline. They may arise in the adrenal medulla or in the extra-adrenal chromaffin tissue — along the sympathetic chain in the chest or abdomen, or in the organs of Kohn and Zuckerkandl which lie along the abdominal aorta. Many of these tumours are non-secreting. Other tumours of the sympathetic nervous system, ganglioneuromas, and neuroblastomas occasionally secrete catecholmines.

Pheochromocytomas may secrete in 3 ways; continuously, intermitently or with stress only as with parturition or operation. Signs are hypertension, bradycardia (noradrenalin) or tachycardia (hyadrenalin), hypermetabolism, hyperglycemia with glucosuria and excessive sweating. *F.L.*

Establishing a Practice

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There is a considerable difference in general practice depending on whether the location is in an urban or a rural area. It must be realized, as well, that there is some difference between general practice in an urban area, and that in a large metropolitan area, which has its own peculiar problems.

It is proposed to outline the establishment of a general practice in an urban area, with special reference to those problems which pertain to a large metropolitan area, although it is agreed that general practice, no matter where it is conducted differs only in degree, and in available facilities. The discussion will be divided into three parts — the mechanics of setting up practice, the operation of the practice, and finally some comments on the economics of practice.

The first basic decision that one must make, is the method of practice one desires to follow. There are three main types that must be considered, and each has its advantages and disadvantages. Firstly, and probably the most common type is solo practice. It has been estimated that about 60% of doctors entering general practice do so by opening their own office. In doing this, one has the satisfaction of knowing that his success is entirely due to his own efforts, and that he has the full responsibility for his patients and the operation of his practice. He is able to conduct his practice in the way that he thinks best. He must also accept full responsibility for any shortcomings that may develop. There must be considerable sacrifice of time away from home and family, and denial of many recreational activities and community services. The heavy financial burden of maintaining an office single-handed is not to be forgotten, and may well prove to be an almost impossible task, if the increase in office over-head continues as in the past few years. This problem applies particularly to metropolitan areas where salaries and services are high. However, in spite of the many disadvantages, the personal satisfaction of individual effort does provide a rich reward.

The second method of practice is by forming an association with a physician already established. This usually takes the form of an assistantship initially, and in time develops into a partnership if mutually agreeable. The advantage of course is that there is little or no financial outlay on the part of the young doctor. He becomes a part of a well-established practice. The financial returns, however, may not be as much as one would expect. The older doctor hesitates to pay a large salary until he is sure that the assistant is capable and has gained some experience. There is no doubt that many things about practicing medicine are learned in practice, and the supervision of an experienced physician is invaluable. Unfortunately, this type of arrangement is satisfactory for only short periods of time — one to two years. The commonest difficulties that occur are personality differences, poorly thought out arrangements, and misunderstandings about the relationship. It is recommended, though, as a preliminary to setting up one's own practice, for the experience gained is worth much in time and money.

The third method of practice is to become associated with a group of doctors. It would appear that group practice will form the pattern for the future. Under this method of practice, larger and better office facilities, and more efficient ancillary personnel are possible, because of the sharing of the expense by several individuals, and the pooling of requirements for these services. In the modern practice of medicine it is so important to have comprehensive diagnostic and laboratory facilities, which are quite feasible under group practice, because of the larger patient load that can make use of them. These tools of diagnosis are economically impossible under any other method of practice. It is usual to make up groups from among the various specialties, so that a complete consultative service is available within the same organization, without the need for going outside to seek advice except in the most difficult problems. One of the main disadvantages is the tendency for a decreasing personal relationship with the patient. To some doctors, this disadvantage far outweighs all other advantages, as they feel that maintaining the closest personal relationship with the patient is the most important part of the practice of medicine.

The choice of a location for setting up practice is governed by many factors, and requires a great deal of thought before a final decision is reached. In general, the basic requirement for success in practice, is that there is a need for a doctor in the area. Information is available from the Ontario Medical Association as to the population density in various urban areas in the province, and the number of physicians already located there. It is important to know the age distribution of the physicians established there, as many ideal locations can be found where some of the physicians are in the older age groups and willing to have a younger physician locate close by to relieve them of some of their patient load. In surveying the various locations,

it is valuable to visit the local medical association, as the needs are best known to it, and helpful advice can be obtained about the suitability of setting up practice in that particular area.

In the larger centres, because of the phenomenal development in housing subdivisions and the expansion at the periphery, most physicians have set up in these areas when starting a new practice. There is no doubt that the need for medical services exists, and it provides an opportunity for the young doctor to grow up with the community in which he has become established. If the doctor is sincere and willing to work, it is usual for him to find plenty of work to do, and he will have no difficulty in building a good permanent practice in this type of location.

It is important to make a full inquiry about the hospital facilities available. It is becoming more difficult for one to set up near and use the hospital in which one interned. Certainly in the metropolitan areas distance from the hospital and overtaxed facilities make this almost impossible. The hospital administrator should be consulted and the requirements for an appointment to the staff determined. One of the great disadvantages to practising in a large urban area is the shortage of hospital beds, and the difficulty of obtaining access to them. In hospitals in which departments of general practice have been established, an effort is being made to preserve the opportunity for general practitioners to use hospital facilities to the best of their ability, but demand for hospital beds and the shortage of such beds makes the result mainly an academic one.

Once the location of the practice has been decided, it is necessary to acquire an office. The choice between having the office as part of the residence, or as a separate entity will depend on several factors, but the most important one is financial. In smaller urban areas, it will depend on local custom. If the pattern is to have the office in the house then it certainly would be wise to follow suit. However, it is more usual now to locate the office in a separate suite away from the residence, and this has certain advantages which are more apparent after one has been in practice for a few years. Certainly from a financial standpoint it is better to have the office in the house. The initial expense is much less, as one has to have a house anyway, and certain tax deductions can be applied against the cost of buying the house when the office is located there. Probably the ideal arrangement is to start with the office in the residence, and as the practice develops a change to an office separate from the house can be made if desired. It is now very important before making any committment to make sure that your plans for an office and its location conform with the local zoning by-laws. This information can be obtained from the local municipal offices. It is wise to seek legal advice at this stage so that all legal and statuatory requirements can be fulfilled. While on the subject of legal advice, it is important to join the Canadian Medical Protective Association before you start practice. The number of actions against doctors for real or imagined malpractice has increased and it is a wise precaution to have the fullest protection against any such eventuality.

In furnishing the office, it is suggested that one decide what is necessary to conservatively provide furnishings. It is unwise to start with too much and too lavish furniture. Frequently it will be found to be unnecessary, and is a needless expense in the early stages. It is helpful to draw to scale the office plan, and fit in scale models of the various pieces of furniture in order to arrive at the most efficient arrangement. There are office equipment firms who will be glad to do this for you, but you usually have far too much furniture provided, and experience will teach you that you can get along with much less than the salesman who is selling office furniture believes is possible. The same rules should apply to buying equipment and supplies for the examining room. The bare essentials should be purchased, and as experience and needs develop, the additional requirements can be purchased when necessary. Almost every doctor starting in practice finds himself loaded with pieces of equipment and supplies that he has never had any use for. Supply houses are as close as the telephone and needed material or equipment can be obtained within 24 hours or less. The cardinal rule in buying both office furniture and supplies and instruments for the examining room is to get along with the bare minimum and add as the need develops. It is wise to have a plan of procedure allowing for expansion so that additions to furniture and office filing equipment can be made advantageously.

When all the physical needs for starting practice have been met, some attention must be directed to the professional. It is presumed that all are familiar with the requirements for registration with the College of Physicians and Surgeons of Ontario. This must be done before one can engage in the practice of medicine. One should be familiar with the Code of Ethics of the College that governs professional conduct. An announcement in the local newspaper that you are commencing practice at a certain location is considered ethical. Cards announcing this fact may be distributed to the local physicians — but to no one else. It is a courteous custom to call personally on the physicians in the area and advise them that you are statrting prac-

tice. Most of them are willing to help you by referring calls that they cannot handle, and as your reputation is established will refer their own patients for your care when they are not available. Application for membership in the local medical association should be made, and often doctors practicing close to your location will assist your application by sponsoring you. And as mentioned earlier, application should be made for hospital privileges, at the hospital closest to you in which you wish to take your patients.

In developing an office routine, the practice is governed by local custom. In some areas it is still expected that office hours will be designated and that the doctor will be available in the office between those hours. However, it is more common now to make office consultations by appointment. Certainly in the larger centres this is the practice. Consultations are usually held in the afternoons and some evenings each week. The idea of the appointment system is that the most efficient use is made of the doctor's and the patient's time. It is a good habit to keep appointments on time, unless prevented from doing so by some real emergency.

The telephone is one of the most important lines of communication between the doctor and his patients. He must make sure that the telephone is answered all the time — twenty-four hours a day. When the office is in the home, it is usual for the doctor's wife to take the calls when he is not in the office. In time it will be profitable to hire a secretary to do this, but at the onset it is an unnecessary expense. There are very efficient telephone-answering services which can be used to provide this service, and they are not expensive. When the office is separate from the home — in rented quarters — the telephone-answering service is a necessity. It is far more economical than hiring a receptionist-secretary, at least, until the volume of the practice warrants it.

It is most essential that good medical records be kept. A system of keeping case histories readily available and complete should be set up as soon as one starts practice. The better organized it is at the start, the less trouble it will cause later on. It should be set up in such a way, that it can be expanded to take care of future needs, by the addition of filing drawers and cabinets. Provisions must also be made for filing correspondence relating to the conduct of the practice. It has been emphasized many times that the keeping of complete patient histories minimizes the problems that may occur if any legal actions are instituted. In the problem of designing a filing system the advice of an expert should be sought. He can tell you what types of files are available for your particular purpose, and can be most helpful in the development of the system.

The final phase of this discussion concerns the financial side of medical practice. It is a far different thing to that which existed some years ago, when bookkeeping was very simple, and consisted only of entries in a ledger — on one page if the money was spent, and on the other if it was received. The problems of income tax, and third-party carriers, and insurance claim forms did not exist. Now, if one is to have any degree of financial success, sound business management principles must be applied. The doctor, more than ever before, must be a good doctor, and a good businessman.

A doctor's bookkeeping system need not be complicated. Some of the most efficient systems are the simplest ones. The physician should have the advice of a professional accountant in setting up such a system. Though the forms used may vary, there are four elements which should be a part of any good financial records system: (1) a daily listing of payments and charges, (2) individual records of patients' charges and payments, (3) a permanent ledger into which daily financial information is placed along with records of income and expenditures, with a detailed description of money disbursed, and (4) a petty cash system within the office for paying small bills from day to day.

The Fee Schedule of the Ontario Medical Association is the guide to be used in setting fees for services. This tariff has been accepted by most of the insurance carriers, and governs the payments that they make on behalf of patients. It is wise to discuss the fee to be charged with the patient before the service is rendered, particularly if the service is in any way unusual or lengthy.

Some definite pattern for sending out statements should be established early in a doctor's practice. Regular billing is an essential part of good collection procedure. Punctuality in billing encourages prompt payment. A doctor who sends bills erratically, must expect his patients to treat their payment responsibilities similarly. The longer payment is delayed, the harder it is to collect. It is customary to send bills at the end of each month, and to follow up conscientiously on uncollected bills.

An accountant should be engaged to supervise the financial records from time to time, and provide an audited statement at the end of the year. He should also prepare Federal Income Tax Returns.

Some of the problems that must be considered in setting up a general practice have been outlined. It is difficult to provide detailed information because of the many variants involved, but it is hoped that the general advice has been helpful.

Group Practice

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During recent years there have been definite changes in the pattern of medical practice in both rural and urban areas. The recent graduate, beginning practice, may find himself working in an environment which is influenced by political and economic considerations, which were not envisaged by himself when he decided a few years ago to prepare himself for a medical career. The individual, who during the earlier years of his medical training, looked forward to becoming a family physician engaged in a traditional type of solo practice, may now be thinking, in the light of this changing medical environment, about the possible advantages of group practice. It is hoped that this article will provide information of interest about various types of group practice and methods of establishing a group, including certain important details regarding contracts and terms of agreement.

A few years ago, when increasing numbers of group practices were being established, an Ontario Medical Association Committee on Group Practice was formed. Excellent reports were submitted in 1956 and 1957 by this Committee under the chairmanship of Dr. W. I. Taylor. Much of the material used in the preparation of this article was contained in these reports.

This Committee recommended that "*Medical Group Practice* is the application of medical services by a number of physicians working in systematic association, with joint use of equipment and technical personnel, and a centralized administrative and financial organization."

In the interests of good quality of medical services and satisfactory organization, several features are desirable in the group practice of medicine. (1) The majority, if not all of the participating doctors should practice on a full time basis within the group. (2) There should be a common accounting system, providing for receipt of all revenue and disbursement of expenses, in order to determine the net income which provides remuneration for members of the group according to agreement. (3) Adequate histories and records of patients should be maintained by individual doctors and kept in a filing system accessible to all members. (4) Equipment and facilities necessary for diagnosis and good treatment of patients should be available.

The size and type of groups engaging in medical practice may vary widely. Two or more doctors may work together, observing the principles outlined above. A group may be comprised of doctors who all practice in the same field, such as the general practice of medicine, or a particular specialty. Quite often a medical group engages in a form of complementary practice, with some members of the group confining their work to specialty fields, and other physicians engaging in general practice. The needs of the community should determine the personnel of the group, in respect to the ratio of general practitioners to specialists. In certain areas a group comprising only general physicians may provide a high quality of medical care, for most conditions requiring treatment, making use of specialists as consultants, when necessary. In groups of general practitioners, individual doctors may develop special interests, and should be encouraged to increase their knowledge and skill in these particular fields of general medicine by participating in post graduate courses.

Medical groups may be formed for various reasons. Two or more practitioners, with established practices in the same area may decide that it will be advantageous to merge. Occasionally two doctors ready to commence practice, may wish to begin as associates. Sometimes an older doctor, anticipating retirement, may seek an assistant who will eventually succeed him. More often an assistant is required because a doctor finds that his practice has grown so that he is unable to provide adequate care for his patients. The assistant may be hired with a view to future partnership, which may eventually be enlarged if the practice continues to grow.

Successful group practice is possible only when there is mutual understanding, respect and tolerance on the part of individuals whose personalities are compatible. Many factors must be taken into consideration, such as age of individuals concerned, personal habits, disposition and appearance. The doctor who seeks an assistant, should take the initiative in arranging a meeting with the applicant, in an environment which will permit them to assess each other's personalities and qualities of character. This also applies to members of an established group interviewing an applicant who may eventually be considered for admission as a member of the group. It is important also to meet the prospective assistant's wife, and this may be arranged by entertaining them in the home of one of the group doctors, with other members and their wives as guests. The young doctor's wife may be a great help or a deterrent to him in his work in a

new community, and it is desirable that the interested parties have this opportunity of getting acquainted. It is equally important that the applicant should have an opportunity to assess the character and personalities of the people with whom he will be working.

An assistant should be given some assurance at the beginning of his association with another doctor or group, as to the period of time which will elapse before partnership may be seriously considered. This period should be at least one year and in some cases a longer term of probation may be advisable. He may also rightly expect to know something about the terms on which admission to the group may be available in the future. Professional competence and a high standard of medical ethics are prerequisites for successful group practice and during this period of probation, all parties will have an opportunity of assessing each other in this regard. All members of a group, including an assistant, should have freedom to practise without undue interference, providing an adequate quality of medical care is maintained. During the first few months the assistant should determine the standing of the group members in the community, and among other members of the medical profession in the area. The assistant will be under continued assessment, as time passes, regarding his ability to work harmoniously with others.

If group practice is to be successful there must be a clear understanding regarding working conditions and financial arrangements. There are many points on which agreement should be reached and all of this should be covered in considerable detail by a good contract. This is one safeguard against future misunderstandings.

This matter of contract is sufficiently important to justify a good deal of time being spent in discussing the details of an agreement which will ensure that all members of the group will receive fair and equitable treatment. When the contracting parties have decided what they want to accomplish, a competent lawyer should be engaged to prepare and execute a proper legal instrument.

When an assistant is engaged by an individual doctor or a group, the agreement should cover the amount of his salary for a specific period and may provide for reconsideration of remuneration at stated intervals. There should be an understanding that after a definite date, a decision should be reached regarding termination of the contract, renewal on the basis of continued assistantship or opportunity for partnership. An assistant usually provides his own car and is paid an expense allowance to cover cost of operation and upkeep. An agreement is reached regarding days and weekends on duty and nights on call. An allowance of sick leave up to two or three weeks without deduction of salary may be provided, in addition to coverage by Workmen's Compensation Board in event of accident. There should also be agreement regarding termination of the contract by reason of continued disability due to illness or accident or for certain other reasons.

An agreement for group practice on a partnership basis involves more detail and should deal with such items as good faith, ethics and devotion to duty. There may be a statement that all members of the partnership will participate on a full time basis or as mutually agreed from time to time.

The method of sharing of net income must be clearly stated in a partnership agreement. Various methods are used such as (1) sharing according to seniority with an increasing percentage paid to a junior partner over a period of years, leading eventually to an equal share; (2) sharing according to bookings; (3) equal sharing by all members based on an arrangement, whereby an incoming partner purchases a full share in the partnership for a definite sum which may be paid on terms which are mutually agreeable.

This latter plan may appeal to the junior partner, in that it enables him to receive immediately a good income and also establishes him as a full partner with all the rights and privileges enjoyed by other members of the group. Established partners may also favour this method because the payment which they receive for the share sold, is not taxable as income. When remuneration for each member is increased equally with the growth of the practice, co-operative effort is stimulated. It is undesirable to use any plan for the distribution of net income which might foster competition for individual gain within the group.

In regard to property holdings, it is necessary to understand the legal nature of a "partnership" and a "share corporation." A partnership is the relation which subsists between persons carrying on business in common, with a view to profit. A partnership is a legal arrangement, not a legal creature. A share corporation is a legal creature, incorporated under federal or provincial legislation, or under the "Corporation's Act" by letters patent.

Because of a ruling of Mr. Justice McLellan in August, 1956, it has been considered inadvisable, since that time, to attempt to form a share corporation for the purpose of carrying on practice of medicine. However, members of a partnership may find it advantageous to form a corporation to own property, such as an office building, furnishings and equipment. The partnership pays rental to the corporation, which should

be a private company with shareholdings owned by the partners. This arrangement is desirable because it is difficult for partners to hold property in common, but simple for a company to buy and sell property, incur mortgage or other indebtedness, pay taxes, and collect rentals. The plan is fair to all partners, because it gives them all the opportunity of owning shares in the corporation and sharing in the profits of the company. Methods may be devised to enable partners to purchase, within a reasonable time, the shares of a deceased or retired partner. Ownership of property by a holding company assures the partnership the use of a permanent office building.

A partnership agreement also covers rights of members in respect to annual holidays. Most groups grant participating doctors at least four weeks without sacrifice of income. Senior members may arrange, by mutual agreement, for additional holidays, for which they forfeit an appropriate share of net earnings. Most groups allow at least two weeks per annum for post graduate study and attendance at conventions. Agreement should be reached regarding leave of absence due to sickness, including a statement regarding the period during which no loss of income is incurred. The agreement may include details about insurance. All doctors should be members of the Canadian Medical Protective Association. Many groups avail themselves of Workmen's Compensation Board coverage for partners and nursing and clerical staff. Partnership Life Insurance may be desirable whereby each partner is insured with premium payments shared by other partners. This provides an equity, which may be used in payment of the interest held by a retiring or deceased partner.

Provision may be made for compulsory retirement when a partner has attained a certain age, unless the other members of the group agree that he should be invited to remain in the partnership. It is desirable that there be a stated formula, which may be used as a basis for calculating the financial interest of a deceased or retiring partner. Among other things this will take into consideration his share of bills receivable at the time of his retirement. It must be admitted, however that there is no accurate means of placing a monetary value on something as intangible as the contribution which may have been made by one who has worked in a medical group over a period of many years. The retiring partner probably feels that his greatest reward is the sense of satisfaction he experiences in knowing that he has played a role in the development of a professional group which, by rendering good medical care, has earned the respect of the people in the community. It is hoped that such a person may find, in his years of retirement, that any financial returns from the partnership are superseded in true value by happy memories of his years of service and good fellowship within the group.

Up to this point some detailed consideration has been given to various kinds of medical groups which may be formed and to ways and means of establishing a good organization and maintaining harmonious and efficient operation. We must now think about the possible advantages of group practice, and decide whether this is really a good way to practise medicine, keeping in mind the best interests of both the patient and the doctor.

We believe that everyone should have a family doctor and would suggest therefore that any medical group seeking to serve the general needs of a community, should include an adequate number of general practitioners. When this is the case, the patient is assured of greater availability of medical care for most conditions, and particularly in emergencies. Most groups have an adequate number of doctors on call at night and during holidays and weekends, which is very reassuring to the patient who may need help at such times. He does not sacrifice his right of choice of an individual doctor as his family physician, but in case this particular doctor is not available, the patient is usually very glad to accept someone else in the group, whom he probably knows. The patient is assured of better continuity of care in such circumstances, because his records are available to all members of the group through a common filing system.

The doctor in a group may be in a position to make a better diagnosis in a difficult case, because of the facilities for inter-office consultations, which may be equally valuable when the best form of therapy is being considered. The value of such an exchange of opinions is appreciated by the patient himself, who realizes that this is one of the advantages of consulting a physician who is a member of a group. At the same time there is no reason why his confidence in his own doctor need be undermined in any way.

Although group practice does provide certain definite advantages to the doctor, we must recognize that it also is subject to certain problems. Even when the greatest care is exercised in the selection of people who work together, personality conflicts may arise, which must be resolved with patience and forebearance. Members must learn that the interest of the group as a whole may have to take precedence over the interest of the individual, and that occasions may arise when a member is expected to accept gracefully the decision of a majority.

Although there may be certain financial advantages, this should not be the chief incentive for doctors to engage in group practice. Tax savings may be effected and provide some benefit to partners, who have set up a share corporation as a holding company.

A more important advantage is that afforded by a schedule of work which provides for sharing of night calls and allows time off duty on weekends and holidays, giving each individual more time for family life and participation in community activities. Adequate annual vacations mean a great deal to most doctors and they are probably more enjoyable when they can be taken with no loss of income.

More freedom to engage in post graduate study enables members of a group to develop special interests which tend to make medical practice more pleasant for the individual and possibly more profitable for the group.

The greatest advantage of all is the satisfaction one finds in mutual support and companionship within the group. Each member feels that he does not stand alone when serious problems confront him, but always has the privilege of seeking advice and help from a friendly and sympathetic colleague.

Book Review

Fundamentals of Microbiology; Martin Frobisher: W. B. Saunders Company. Illus., 583 pages.

This book is an introductory text to the field of microbiology. Its aim is "to present as clearly and concisely as possible the basic ideas of the major aspects of microbiology" and in this it is eminently successful. Through the judicious use of diagrams and photographs coupled with a well-organized, clearly written text the author has successfully presented topics ranging from optical and staining methods, through classification and description of microorganisms (including protozoa, yeasts, molds, bacteria, PPLO, viruses, and others) to antibiotics, sterilization, and industrial applications of microorganisms. Some of the latest concepts in biochemistry are employed in order to clarify certain articles. This is especially true in the sections on viruses, enzymes, antibiotics, and immunology.

The book is intended primarily for beginning students in microbiology. Its lack of clinical description precludes its extensive use by medical students in their clinical years. However, it is highly recommended for students beginning microbiology or reviewing the basic principles in later years. *K.A.O.*

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Frostbite

James Graham 6T3

Severe frostbite occurs most frequently with very low temperatures and high altitudes. However, the winters in many parts of Canada are severe enough to make the risk of frostbite possible in people who may be inadequately prepared for cold weather such as alcoholics or winter sports enthusiasts.

The severity of any cold injury primarily depends on exposure to cold — the temperature and length of exposure. However, many factors determine an individual's susceptibility to cold injury. Previous cold injury increases the possibility of further injury, and good physical condition decreases the possibility. Racial background and previous climatic exposure are important factors, for Negroes and southerners in the Arctic with the U.S. Army have increased rates of frostbite[2]. Sweating is associated with increased rates of injury. Other factors such as fear, exhaustion, hypoxia and inadequate nourishment are especially important in mountain climbers and high altitude flyers[1].

Two very important factors in cold injury are, logically, the amount of heat in the body and the vascular supply to a particular limb. Exercise and proper nourishment are important in heat production. Proper clothing is good insulation and conserves the heat for the whole body. However, alcohol dilates capillary beds just under the skin and may cause a loss of heat. Exercise, even though increasing body heat and blood supply to the limbs, may induce breathlessness and large quantities of body heat may be lost through the lungs. Peripheral blood supply is decreased with immobility, disease states causing peripheral vascular insufficiency, and smoking at the time of contact with cold.

When tissue is chilled arterioles contract in an effort to prevent loss of body heat, and if the chilling is severe, arterioles can become completely closed. This disruption of circulation causes damage to the tissue supplied, in amount depending on the length of time the vessel is closed. The capillary shunt mechanism is then brought into play, bypassing blood directly from arteriole to venule, in an attempt to keep some blood flowing to the affected part. These shunts stop and start in cycle causing the involved area to chill and warm, often causing additional loss of body heat. After a certain point the extremity starts to freeze, as if the body were sacrificing an extremity in favour of the whole. Ice crystals, if freezing is slow, form between cells and derive water for their growth from adjacent cells. This process causes dehydration and serious injury to cells within half an hour[1]. Because of injury to blood vessel walls, there is an exudation of fluid elements of the blood and red cells become agglutinated, blocking the lumen of the vessel[3]. This "sludging" of the blood along with closure of capillary beds causes tissue damage and necrosis through prolonged denial of oxygen and nourishment to the cells.

Frostbite may appear in varying degrees, but even in its mildest form some damage is done to tissues. Frost "nip" is a sudden blanching of the skin and numbness of the cheeks, nose, ears, chin, fingers or toes. True frostbite is divided into four degrees by the U.S. Army, but differentiation is impossible until several days after the injury and treatment for all degrees is identical. Washbourn[1] recognizes two forms of frostbite: superficial and deep. Although the skin is white and frozen in superficial frostbite, the deeper tissues are soft when depressed. Deep unthawed frostbite makes the injured part as solid as wood.

Superficial frostbite is characterized by numbness and cyanosis after rewarming followed by edema and burning sensations. In more severe cases, vesicles form in one to two days, and slowly dry up over a two week period. After edema subsides desquamation usually takes place. Deep frostbite is characterized by very large blisters which may take from three to five days to develop. Edema forms and blue to grey discoloration takes place. Aching or shooting pains may last even after the blisters dry and the skin sloughs off. In severe deep frostbite that is not rewarmed properly, blisters may not form and the injured part may stay grey and cold. Gangrene develops in these cases starting at the tip of the extremity. The skin of affected tissues become black and shriveled unless infection and wet gangrene aggravate the situation.

Frost nip may be effectively treated outside[1]. Firm pressure of a warm hand or blowing through cupped hands on an affected spot on the face will stimulate circulation. Frost nip on fingers and toes may be announced by a cessation of cold sensation in the area. Frost nip on fingers may be rewarmed by holding them motionless in the armpit. Nipped toes or heels should be placed on warm skin such as the abdomen of a friend if shelter is very far away.

In true frostbite, the patient should be taken to shelter or preferably a hospital as soon as possible. A frozen part should never be rubbed or thawed in snow or cold water. Additional injury also results from ex-

posure of the frozen part to open fire or very hot water. Efforts at thawing should wait for optimum rewarming conditions where no danger of refreezing exists. Walking on a frozen foot is possible but walking on a thawed foot is *verboten,* since very serious tissue damage may result. Smoking or drinking alcohol is dangerous for the frostbitten patient because of the previous-mentioned effects on the peripheral vascular system.

Once at a warm shelter, the patient should be treated as well as his frostbite. He should lie down and active attempts to warm his entire body should be initiated. A body-warmed sleeping bag or an electric blanket is useful for warming the patient. Hot liquids are also given. As his deep body temperature rises, circulation to the frostbitten extremity will improve.

For freezing injuries, as opposed to non-freezing injuries like immersion foot, rapid rewarming of the frozen extremity is the treatment of choice[1]. A large vessel of water should be warmed to 108 - 112° F and the frozen hand or foot placed in it, not touching any part of the bucket. Rewarming should last about 20 minutes and the water temperature should be kept from cooling below 108° F by adding water heated not over 115° F. If a large vessel is not available the part may be wrapped in towels and the warmed water poured over them. If accurate temperature regulation is not available, the frozen extremity should be warmed against someone's body after covering the part in bandages to reduce friction. This should be performed as a continuous operation which may take three or four times as long as the liquid method.

During the thawing operation and afterwards the patient should receive acetyl-salicylic acid tablets (two every two to four hours) to relieve pain. If the patient is in good condition 25 mg. meperidine may be given 15 minutes before rewarming. In a hospital environment, an IV solution may be given[4] every six hours for 48 hours, consisting of 12 ml. ethyl alcohol, 250 mg. procaine HCl in 250 mg. in 5% glucose/water. If there is no bleeding 100 mg. heparin may be added to the solution. A tetanus antitoxin or booster tetanus toxoid may be given. If vasodilators are used, hexamethonium seems to be the best for this purpose[4].

After rewarming is complete the thawed part should be cleaned with a non alcoholic antiseptic or mild soap, being careful not to rub the skin. It is then kept open to the air with nothing touching it, or, if it must be covered, loose dry sterile dressings are used with cotton between fingers or toes to prevent friction. These are changed only if they become very dirty. The affected limb is kept horizontal and still until swelling and blisters have subsided. Blisters should be left alone, but if they do break, they should be cleaned occasionally with a non alcoholic antiseptic or mild soap as above[1].

During his recovery, the patient should have total rest and good food. A diet containing increased amounts of protein and carbohydrate should be supplemented by multiple vitamin pills. Physiotherapy is an important part of recovery. Frequent careful movement of all joints of the involved part may be carried out by the patient in an effort to prevent later immobility. One or two 20 minute whirlpool baths in 3% water-and-hexachlorophene should be carried out each day to maintain flexibility and to minimize infection[1].

If infection develops, an oral broad spectrum antibiotic should be used. One of the safest is demethylchortetracycline 150 mg. every four hours for four days and every six hours for a week. Dead tissues should not be cut off unless uncontrollable infection is present, and then surgery should be delayed as long as possible. It is found that the skin is more severely affected than underlying tissue and sloughing of necrotic material will most always occur spontaneously.

The use of sympathectomy is controversial. Some say that it has no apparent value and should only be used for long term hyperesthesia, Raynaud's phenomenon or hyperhydrosis. One series in New York[5] seemed to show that edema and pain decreased earlier if sympathectomy was done within ten days of injury. An increased rate of healing was also observed.

Frostbite may be reversible in most cases but there are almost always long term sequelae. Cold feet, numbness, hyperhidrosis and pain, abnormal skin and nails and joint abnormalities may be left with the patient for years afterwards. Proper attention to the details of dress and to the length of exposure to cold will prevent frostbite in large measure. However, once frostbitten, a patient should be treated rationally for as long a time as necessary in order that the best possible result may be obtained.

ACKNOWLEDGMENTS

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Answers to On Inspection

Questions — page 102

FIGURE 1: Neurofibromatosis (Von Recklinghausen's Disease)

This is a Mendelian dominant inherited disease in which spots of increased skin pigmentation are combined with multiple neurofibromas. The pigmented spots are of brownish coffee-colour (café-au-lait). The tumours arise from the neuriterminal sheath (Schwann cells) and fibroblasts. They tend to grow slowly throughout life and occasionally cause protrusions of the skin which form hanging grape-like masses of tissue.

Most of the tumours are asymptomatic. However, tumours of the spinal nerves (dumbbell tumours) may compress the spinal cord; those arising in the cerebellopontine angles may cause deafness by compressing the auditory nerves.

Other types of tumour are encountered more frequently than in the general population. These include meningiomas, gliomas, including glioma of the optic nerve, pheochromocytoma and fibromas of the colon. Other associated conditions are local gigantism of a limb, subperiosteal bone cysts, pseudarthrosis of tibia, scoliosis, mental retardation, stenosis of aqueduct with obstructive hydrocephalus. In 5 to 10% of cases sarcomatous degeneration of one or more of the neurofibromas occurs. There is no effective treatment other than excision.

FIGURE 2: Myotonic Dystrophy (Steinert's Disease)

This is a hereditary disease characterized by myotonia, muscular wasting, cataracts, gonadal atrophy and frontal baldness. Myotonia is an inability to relax a muscle normally after its contraction and is the result of repetitive discharge of the motor endplate. In this disease it characteristically involves the adductors of the thumb thereby explaining the patient's chief complaint. Myotonia characteristically disappears after repetitive motion. Muscular wasting involves the sterno-cleidomastoids, temporal muscles, muscles of the anterior part of the neck, forearm, thenar and hypothenar eminences; the patient exhibits a dull expressionless facies with deep-set eyes — the hatchet face. Gonadal atrophy tends to come on more commonly in males than in females and occurs earlier in life in each succeeding generation affected with the disease so that eventually the family dies off. Other associated features are blepharoconjunctivitis and dystrophic heart disease.

Treatment is with quinine 5 grains t.i.d.; this drug relieves the myotonia by increasing the refractory period of muscle and decreasing the excitability of the motor endplate. Steroids and procaine amide also are effective in relieving myotonia.

Closely related, but distinct, disorders are Adynamia Episodica Hereditaria, characterized by weakness, abscence of myotonia, and increased serum potassium and Familial Hyperkalemic Paralysis which features weakness, myotonia, and increased serum potassium. The serum potassium level in Myotonic Dystrophy is normal.

FIGURE 3: Scleroderma (Progressive Systemic Sclerosis).

This disease, like Lupus Erythematosus, is a member of the collagen family. It is an insidious chronic disorder, with fewer constitutional symptoms than Lupus Erythematosus, characterized by progressive collagenous fibrosis of many organs and systems.

The skin and its appendages and skeletal muscle are usually involved first. With progression of the disease, the alimentary tract, heart and vessles, the serous surfaces of the body, the bones and joints, endocrinc glands, nervous system and kidneys may also become involved. Depending on site of greatest involvement patients may present either local or diffuse thickening of the skin with pigmentary changes or telangiectases, Raynaud's syndrome, diffuse calcinosis, dysphagia, dyspepsia or malabsorbtion syndrome, hypertension and myocardial disease, pulmonary fibrosis, or arthritis.

With involvement of the skin there is initially a doughy edema which is then replaced by a thickened induration leading to a dense adherence of the epidermis to the underlying subcutaneous structures. Atrophy of skin and underlying tissues then supervcnes resulting in a smooth, glazed, shiny and densely bounddown epidermis (note absence of facial skin creases). With loss of blood vessels ulcerations frequently appear.

Progression of the disease to involve the esophagus results in dysphagia. The tightness of thc facial tissues causes some difficulty in talking. Treatment is with steroids.

FIRGURE 4: E Syndrome.

When trisomy, a specific chromosomal aberration

characterized by presence of excessive chromosomal material resulting from translocation of part of one chromosome to another, affects an E Chromosome (the E group comprises autosomal chromosomes 16, 17 and 18), the resultant defects observed clinically are called the E Syndrome.

The syndrome is characterized by low-set and malformed ears, small mandible, webbing of the neck, mental retardation, hypertonicity, flexion of fingers, dorsiflexion of toes, failure to thrive, patent ductus arteriosus, interventricular septal defect and inguinal and/or umbilical hernia. The child usually dies in the first few months of life.

FIGURE 5: Acromegaly.

Acromegaly is a condition which develops in adulthood as a result of increased secretion of growth hormone from an acidophilic adenoma occurring in the pituitary gland.

The condition is first noted by change in facial features, size of head, hands and feet, necessitating increases in hat, glove or shoe size. Other patients first notice headache and visual disturbances as a result of local spread of the tumour. The features of the full-blown clinical syndrome resulting from local enlargement of the adenoma, are enlarged sella, uncinate fits, rhinorrhoea, papilledema and the common presenting features of headache and visual disturbances.

The increased secretion of growth hormone results commonly in acral growth, prognathism, visceromegaly, osteoporosis and impaired glucose tolerance nerves. Approximately 12% of patients with acromegaly develop full-blown diabetes mellitus. Less commonly, hypermetabolism, hyperhydrosis, arthritic complaints, and hypertrichosis are also found.

Occasionally there are disturbances of other hormones of the anterior pituitary resulting in lactorrhoea, increased libido, hyperthyroidism and/or hyperadrenocorticism. Late in the course of the disease after normal pituitary tissue has been compressed features of hypothyroidism and decreased secretion of ganadotrophins and adrenocorticotrophin may be found.

The activity of the disease is indicated by the increased level of serum inorganic phosphorous. Treatment is by radiotherapy when there is no extrasellar extension of the tumour. Visual impairment is a prime indication for surgery.

FIGURE 6: Systemic Lupus Erythematosus.

This disease is one of the so-called collagen diseases and is characterized by envolvement of the skin, mucosal surfaces, serous membranes and heart, vessels, kidneys, lung, joints and brain. It is acute or subacute in onset, typically remitting and febrile in nature, afflicting principally young women.

Pathologically the disease is primarily one of collagen tissue. The characteristic alterations are mucoid degeneration which is pooling or increase in ground substance, fibrinoid degeneration of collagen fibers, with subsequent collagenous fibrosis or hyalinization of the degenerated foci. An autoimmune response is thought to be the cause of the disease; the gammaglobulius are eventually elevated in nearly all cases.

As a rule the patient presents with generalized systemic manifestations such as fever, malaise, weakness, anorexia and weight loss. Skin manifestations occur in 85% of patients, usually early in the disease; these include vascularized lesions round the nail beds and the tips of the digits and also the butterfly rash over the malar areas, which is actually an erythematous maculopapular eruption. Arthralgia may be the earliest and only abnormality, sometimes for a prolonged period. Recurrent episodes of pleurisy are very common. With increased progression of the disease, cardiac murmurs may be heard and a full-blown picture of nephrotic syndrome may appear.

The triad of arthritis, carditis and nephritis should suggest lupus erythematosus. Approximately 80% eventually develop a positive LE cell test and although positive LE cell tests have been reported in casis of hepatitis, cirrhosis and rheumatoid arthritis, a positive LE cell test with a supporting history is virtually diagnostic of lupus erythematosus. Treatment is with steroids.

FIGURE 7: Rhinophyma.

This is a variant of Rosacea affecting the nose. It is a progressive, deforming, nodular enlargement of the alae nasi due to hypertophy of sebacious follicles in patients with chronic severe acue rosacea. There is no relationship between the development of rhinophyma and alcoholic intake.

Treatment is by plastic repair.

FIGURE 8: Brown-noser.

No more need be said.

S. M. Zweig, 6T3

I gratefully acknowledge the assistance of the Photography Department, New Mount Sinai Hospital, and the courage of one female medical student who shall remain forever nameless.

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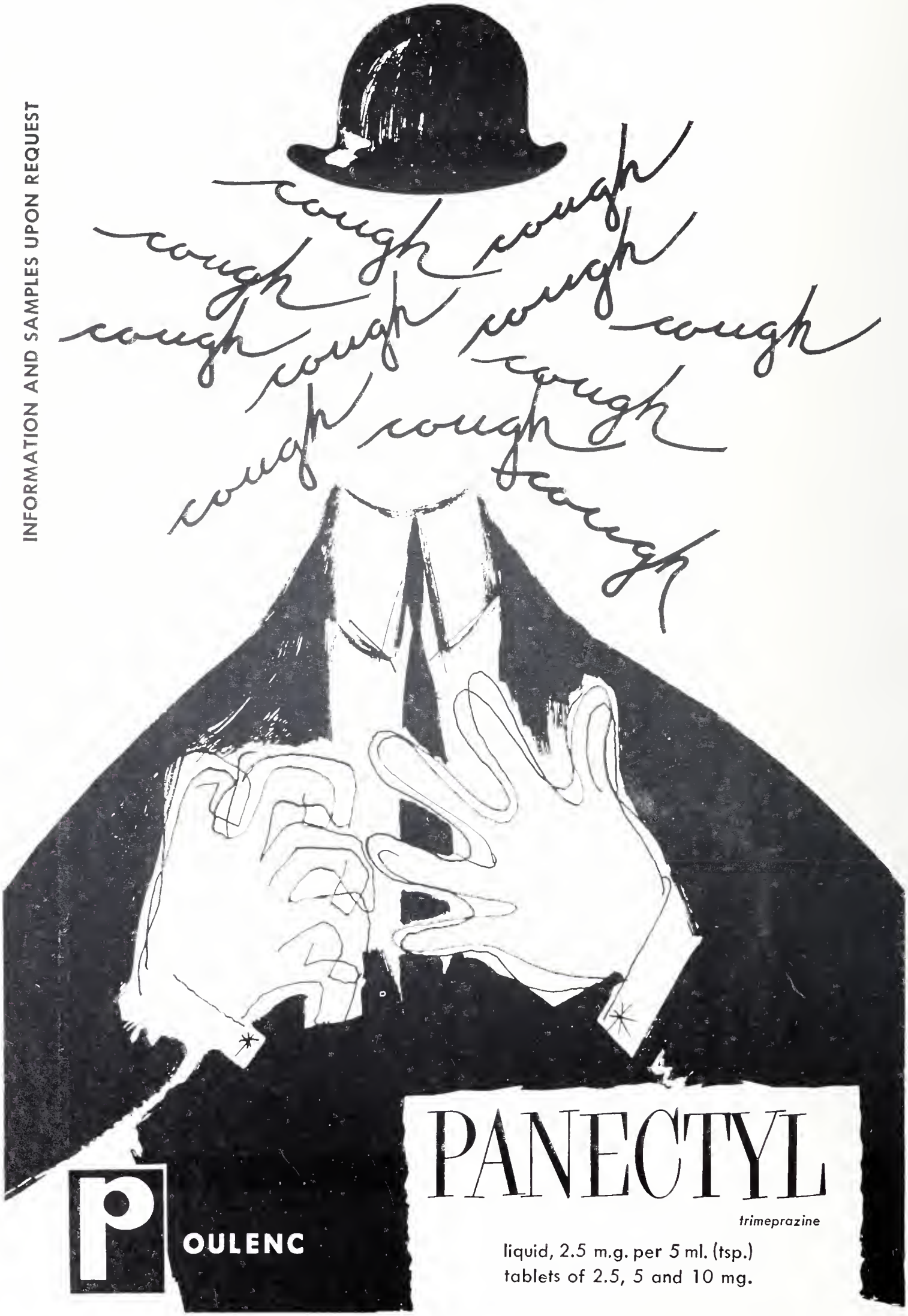

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